

Innovative e-Board of New Conception

Orion e-Board Solutions

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User's Manual

OPE-11701 | OPE-8401

Thank you for purchasing our MPDP.
Please read through this user's manual for safety before installing this product.
This product is manufactured for Multi Plasma display model only.

The Features of e-Board

- ▶ The perfect flat wide screen with high brightness and high resolution.
- ▶ No restriction for installation and moving with its thin structure.
- ▶ Multiple screen plays simultaneously with its unique function of various forms of screen division.

Thank you for purchasing our e-Board

This manual describes how to use the product and notes in use.

Please read the manual carefully before using it.

After reading this manual, please retain for future reference.

If you have any questions or a problem occurs, please contact either the company you purchased this product from or an authorized service center.

※ Displaying static picture for an extended period of time may cause an burn-in effect.



Warning

If you fail to comply with the regulations for safety and proper use, fire or injury may be caused.

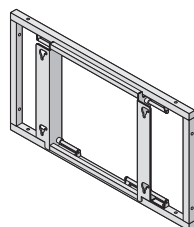


Warning

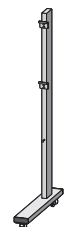
To prevent electric shock, Do not remove cover.
No user serviceable part inside
Refer servicing to qualified service personal.

Optional Accessories

MAIN FRAME



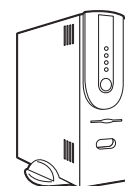
STAND FOOT



Writing Software for e-Board



PC (6 Output Port)



Supplied Accessories (MPDP 1set)

User's Manual



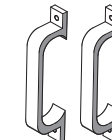
Multi-Screen Control System(MSCS)



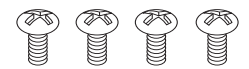
Ferrite Core (1pc)



Handle (2 pcs)



Bolt (4 pcs)



Guide Pin (4pcs)



DVI-D cable



Power cable



RS-232C cable



※ The ferrite core is used to shield the power cable from interference.

※ When connecting a cable, open the ferrite core and clip it around the cable near the plug.

Supplied Accessories of e-Board

Camera Module

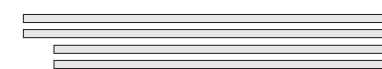
Left



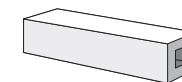
Right



IR Bar (4ea)



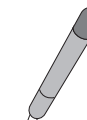
Adaptor



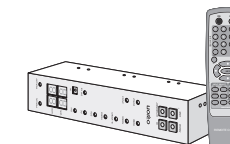
Power cable



Pen



New MFC SET



Frame Top (1ea)



Frame Bottom (1ea)



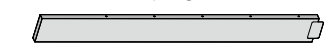
Frame Left (1ea)



Frame Right (1ea)



Mask Cover Top Right (1ea)



Mask Cover Top Left (1ea)



Mask Cover Left (1ea)



Mask Cover Right (1ea)



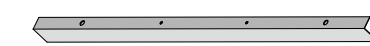
Mask Cover Bottom Left (1ea)



Mask Cover Bottom Right (1ea)



Back Cover (1ea)



M8*10 bolt (20ea)



Washer (20ea)



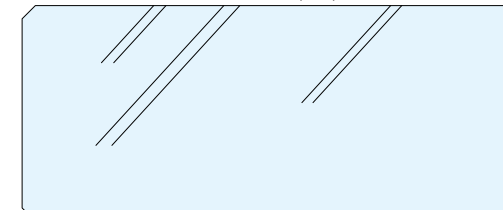
M4*10bolt (24ea)



Ball Driver



Glass (1ea)



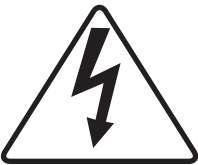
Class A digital device

It is a device designed for business purpose with a safety certificate for electromagnetic interference, which user should be mindful of.

Notice to users

" Important Safety Instructions"

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
The symbol in figure 21 shall be shown adjacent to the text of item 12 above.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



**CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance.

NOTICE

- 1. To disconnect the apparatus from the mains, the plug must be pulled out from the mains socket, therefore the mains plug shall be readily operable
- 2. WARNING - To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.
- 3. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- 4. Use only a properly grounded plug and receptacle
- 5. "Warning" CAUTION – These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

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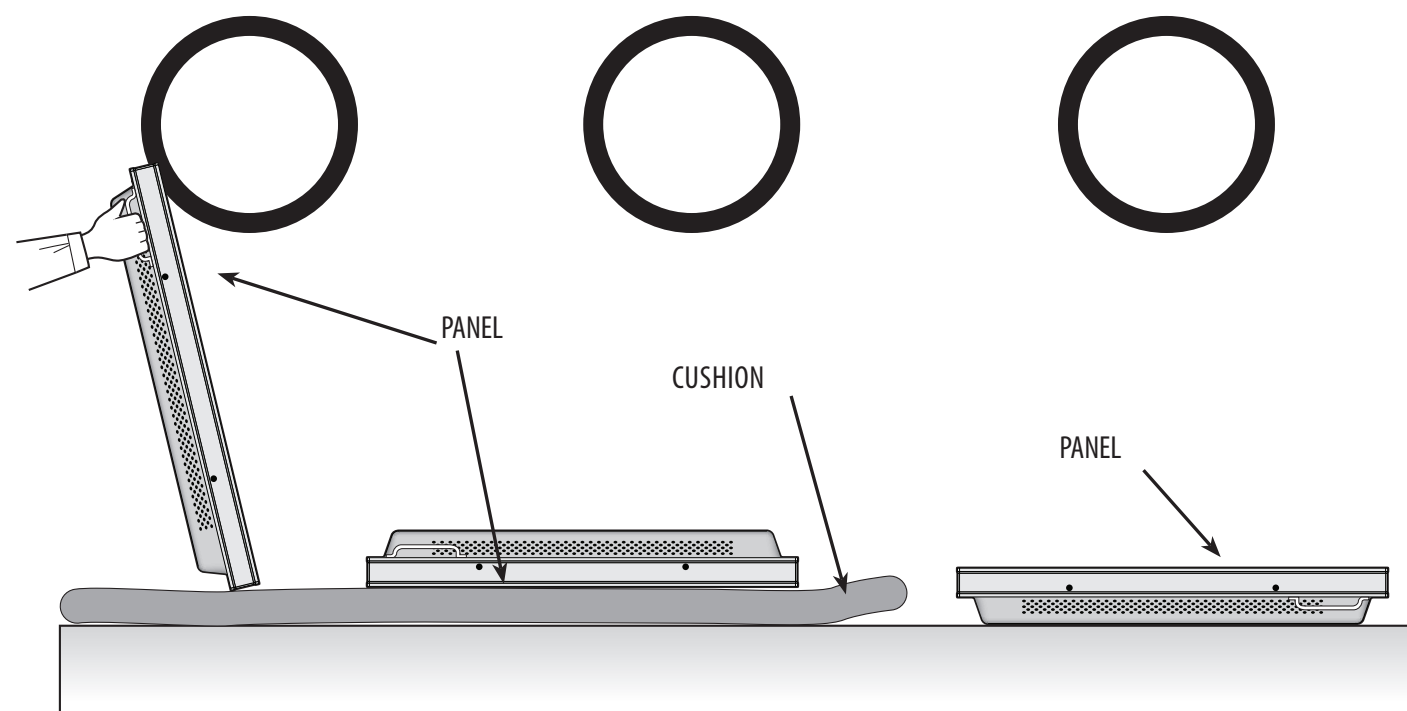
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※ **Please keep following instruction for panel protection without exception.**

- This product can be damaged even with minor impact for its nature.
Please keep following instruction to carry or store the products.

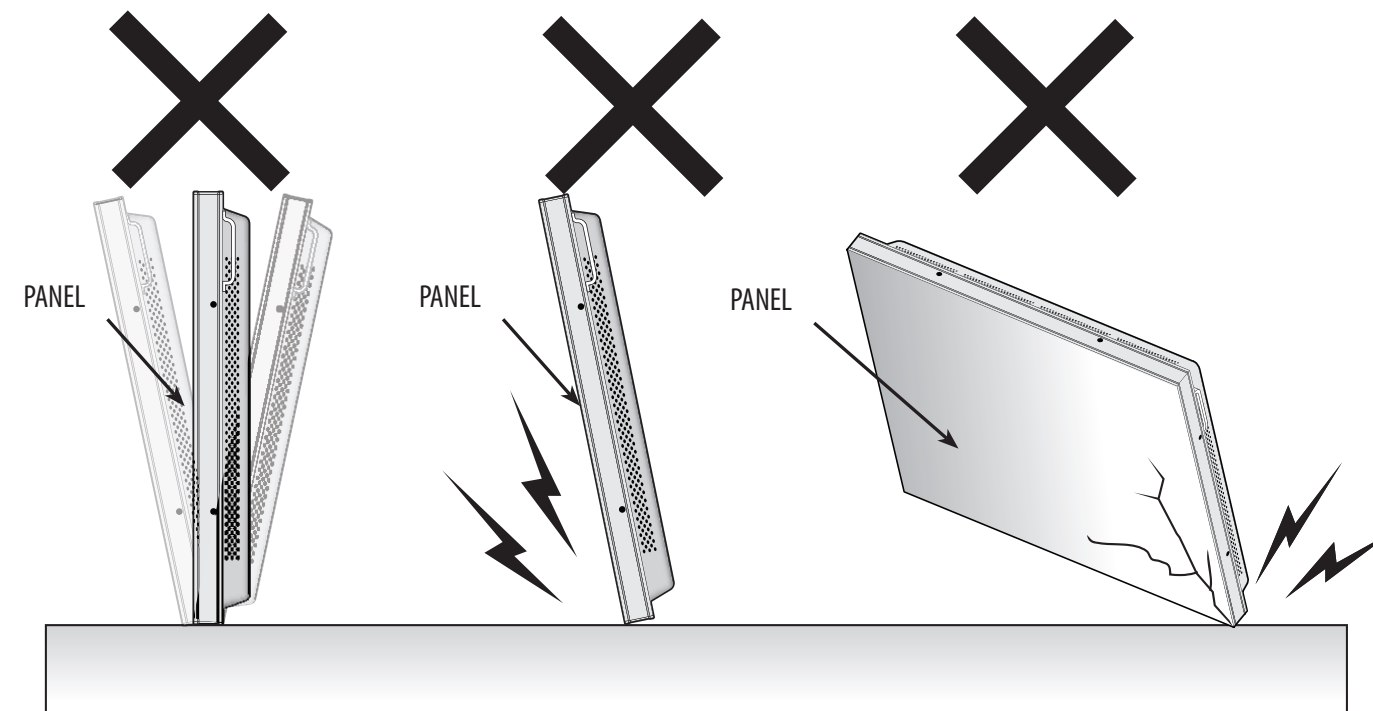


- If you need to stand PDP, you must use handles on the back and lean over the PDP to avoid panel touches ground or floor.
- If you need to lay down PDP as face down position, please use shock-absorbing pads under the PDP.
- If you need to lay down PDP as face up position, please be cautious for falling objects on the surface of the PDP.



※ **Handle with Caution.**

- Shock/Impact on the set's sides will result in internal circuit damages.
- The edge/bottom of the panel are fragile.
Use shock-absorbing pads or rugs for laying down the product.



- Please do not stand PDP alone. It may fall or slip off and Panel can be broken or damaged.
- Please do not lean over the PDP. It may damage the bottom part of the PDP.
- Please do not lean over the PDP toward the edge part. It may damage the edge part of the PDP.

※ Installation Cautions for e-Board

Installation Cautions for e-Board

- The installation of e-Board requires extra caution, because the panels of e-Board can be easily damaged even by minor impact.
- Minimum 20cm clearance from walls or ceiling must be secured for smooth ventilation and the product must not be under air tight condition.
If it is installed at the air tight or near air tight places, improper ventilation causes malfunctions and may shorten the product lifetime by rapid internal temperature rise.
- If it has to be installed at the place of improper ventilation, additional ventilation openings or fans must be provided to maintain the internal temperature between 0 ~ 35℃.
- For ground of e-Board and application devices, it should be connected as frame ground.
- Considering Max power consumption of e-Board, check the main electricity capacity.

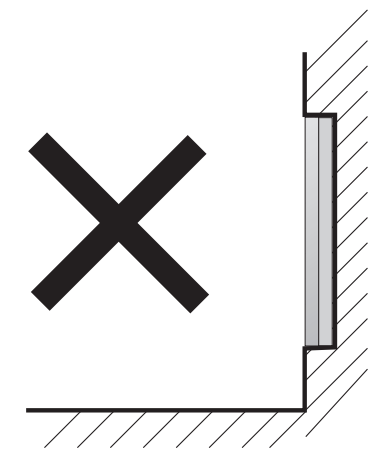
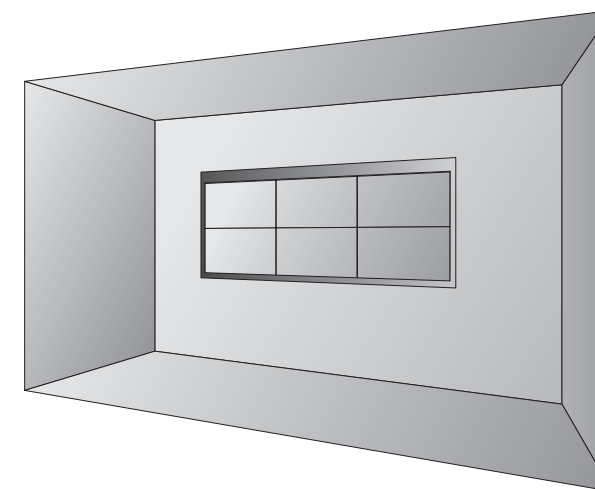
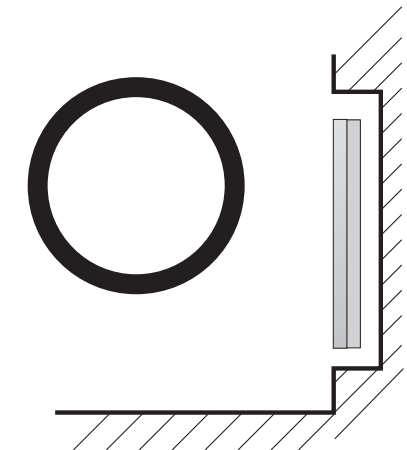
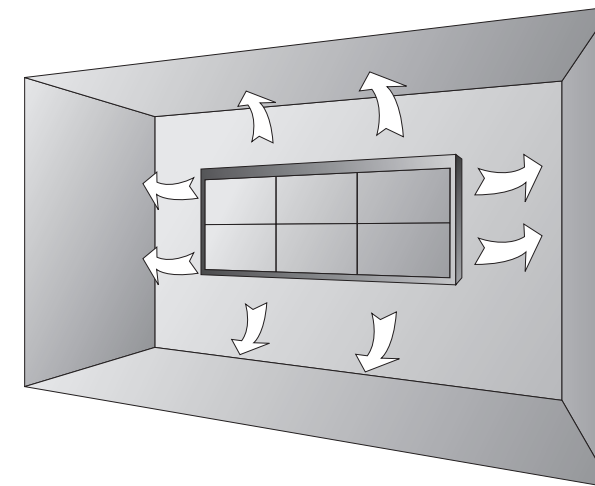
Consideration for easier service

- When you design the exterior design for MPDP system, consider easier disassembly for possible service occasion in the future.
- The sliding Universal Unit of ORION is recommended for easier service.
- If service people can step into the backside of MPDP system, it can greatly reduce time and effort for service.
- In case of higher locations, consider the installation location and exterior design for easier service.

※ Clearance for Ventilation



- When you install MPDP, make sure there is at least 20cm clearance for effective ventilation and do not seal off MPDP sets.
If MPDP sets are installed at the locations of bad ventilation, the inner temperature can be raised rapidly and it can cause frequent malfunctions and rapid reduction of the product life.

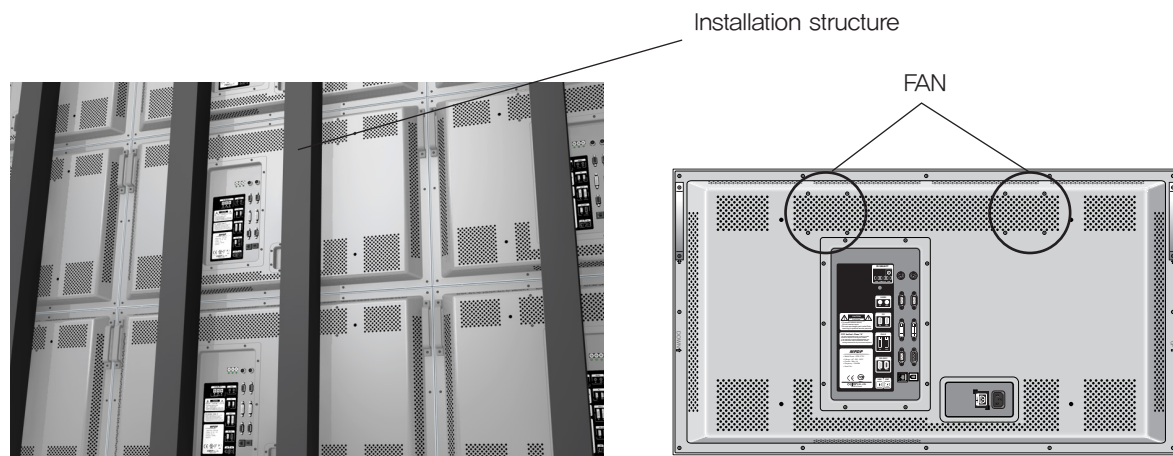


※ Ventilation space in front of MPDP must be furnished for heat dispersion. If the front space of MPDP has to be sealed, there must be consideration for the heat dispersion in the rear side of MPDP.

※ Do not cover the vent hole for the fan



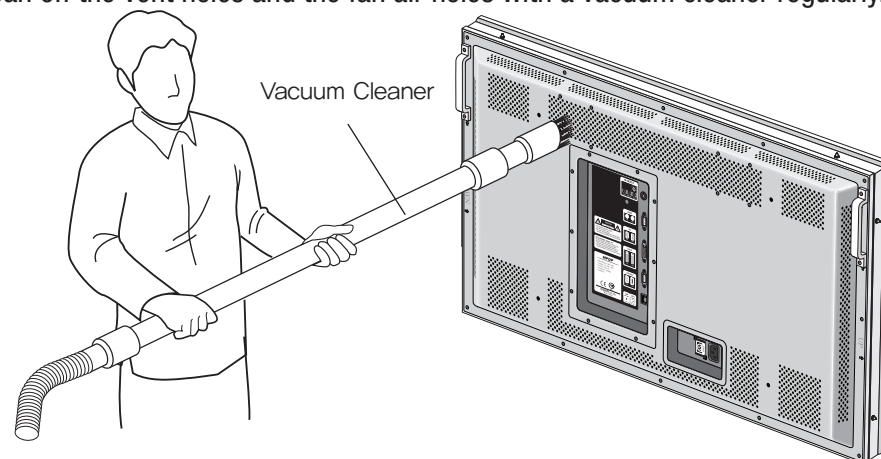
-Carefully install MPDP not to cover the fan air holes with any structural object.
If the holes are covered with anything, the inner temperature can be raised rapidly and it can cause malfunctions.



※ Cleaning and Maintenance

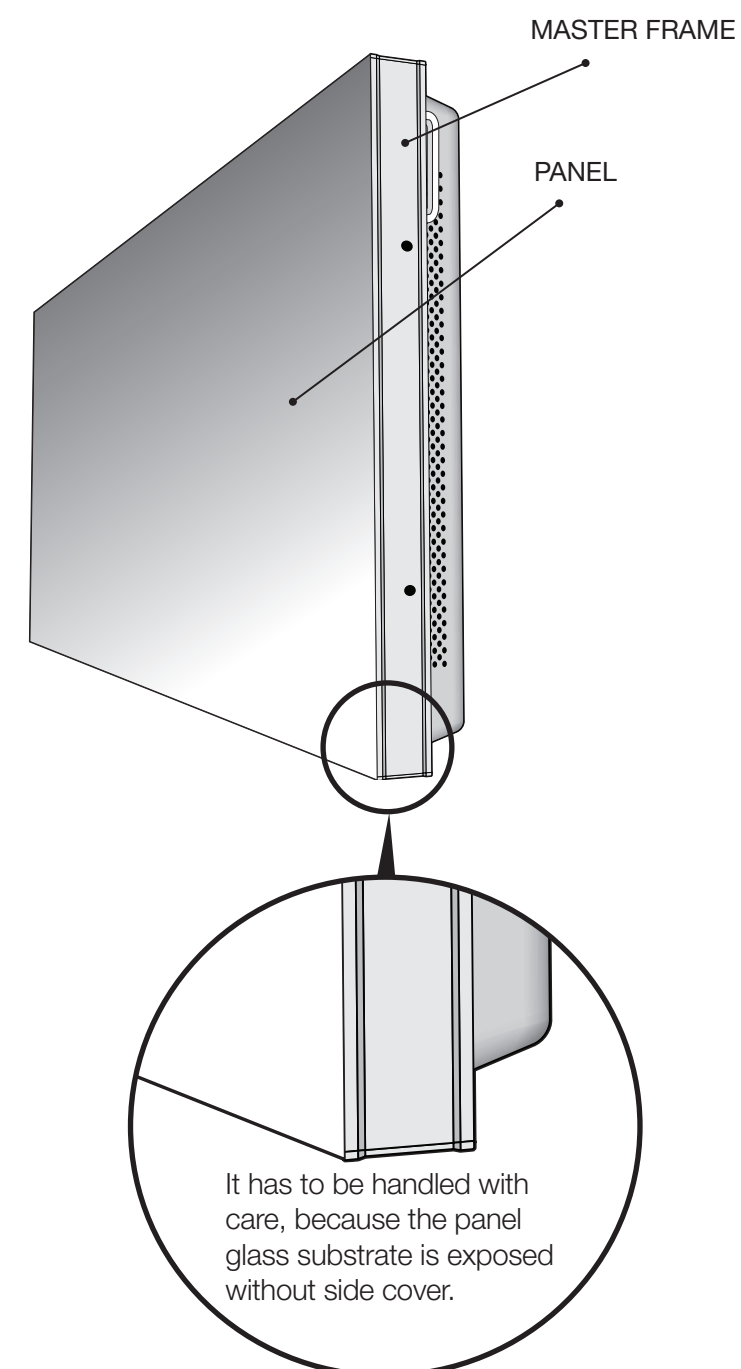


-Regularly clean off the vent holes in the back of MPDP sets.
If the vent holes and the fan air holes are clogged with dust, it prevents the air flow inside of MPDP sets.
It can cause rapid increase of the inner temperature and may cause malfunctions.
Clean off the vent holes and the fan air holes with a vacuum cleaner regularly.



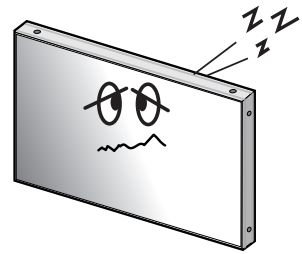
※ Open Structure

-Unlike consumer PDP product, the panel of MPDP is exposed without any protective chassis.
-It needs extra caution to carry or install to prevent any impact.

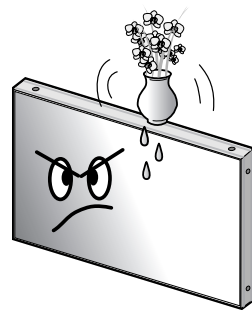


1. Safety Precautions

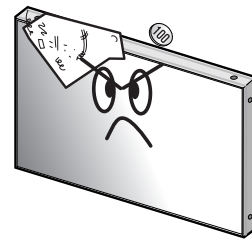
- If it operates abnormally, stop using it immediately.



- Do not place any liquid-containing container on it. If the inside is wet, it may cause electric shock or fire.



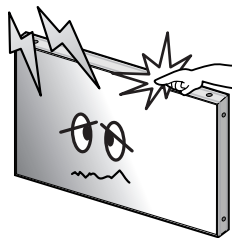
- Do not put any foreign material into the product. It may cause a failure or shorten the life span.



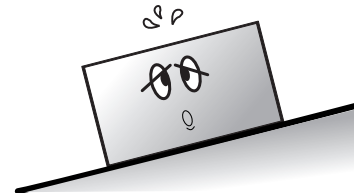
- Please refer to a specialized construction company for installing stand or wall mount unit. Otherwise, damage or injury may be caused.



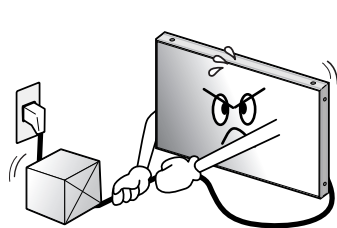
- Do not touch the device when lightning strikes.



- Do not install in an unstable location. It may cause injury.



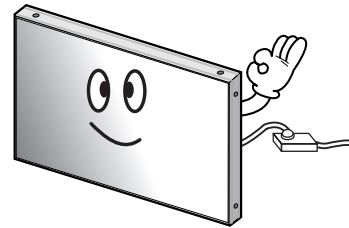
- Avoid any action to damage the power cord or power plug. It may cause fire or electric shock.



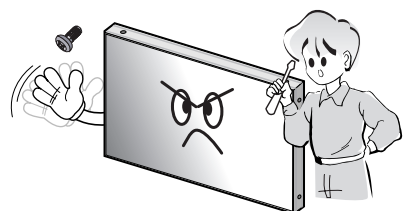
- Do not pull out the power plug with a wet hand. It may cause electric shock.



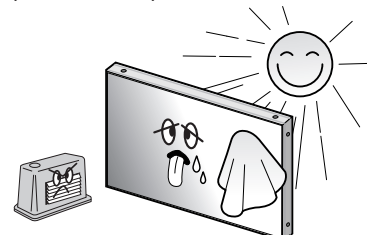
- Do not exceed ratings of AC outlet or extension cords. It may cause failure.



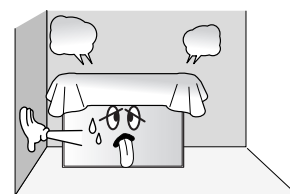
- Do not alter (or disassemble) the product. It may cause electric shock since high voltage is flowing inside.



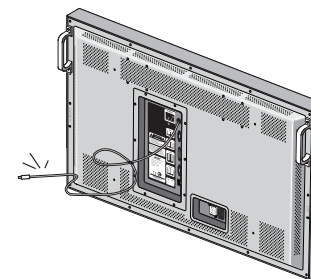
- Do not install the product where it may be exposed to direct sunlight or near any heating device. It may shorten the product's life span or cause failure.



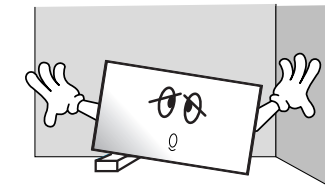
- Make sure the product is not covered with any object. If the ventilation hole is blocked, the inside temperature may rise to cause overheating resulting in fire.



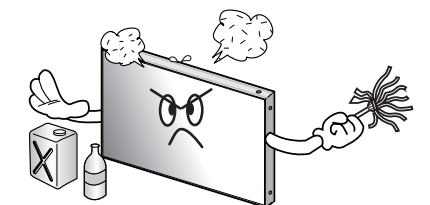
- Do not pull out or hang down the connection cable. It may damage the cord to cause fire or electric shock.



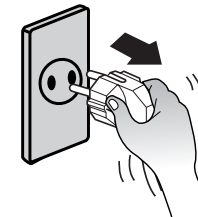
- Do not lean against the product or keep it leaned. It may cause injury or failure.



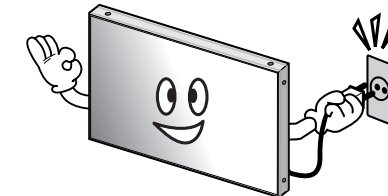
- Do not put it at any place with much humidity, dust, oil, smoke or steam. It may cause failure.



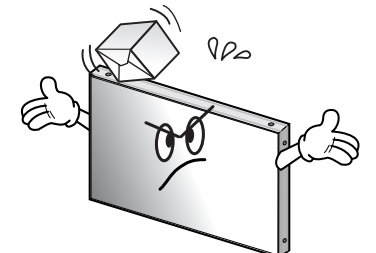
- Pull out the power plug by holding the plug. Otherwise, it may damage the power cord to cause fire or electric shock.



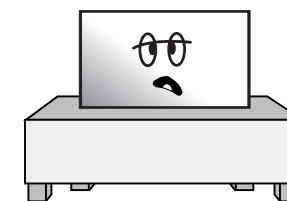
- If you do not want to use the product for a long time, keep the power plug unplugged to save electricity.
- The socket-outlet should be installed near the equipment and be easily accessible.



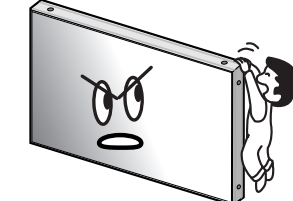
- Do not put any heavy object on it. It may cause failure.



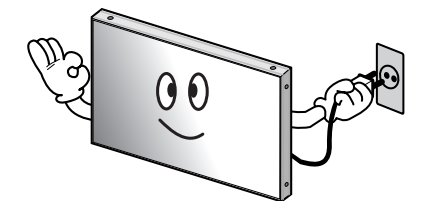
- Install the product on safe and flat surface.



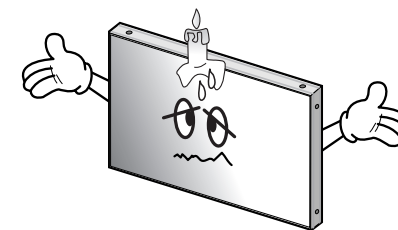
- Do not ride or step on the product. It may cause breakage when fallen down.



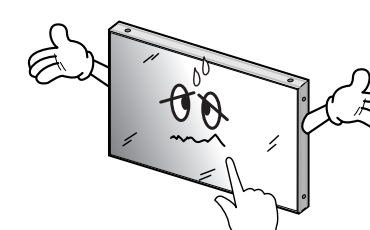
- When moving it, disconnect the connecting cable. Otherwise, it may damage the cable to cause fire or electric shock.



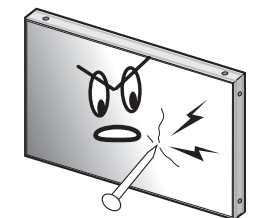
- Do not put candles on the product. If the liquid flows inside the product. It may cause electric shock or fire.



- Do not touch product's front surface with hand. Otherwise, the image quality can be lowered.



- Do not poke the front screen with sharp material. It may damage the screen and may cause malfunction of the product.

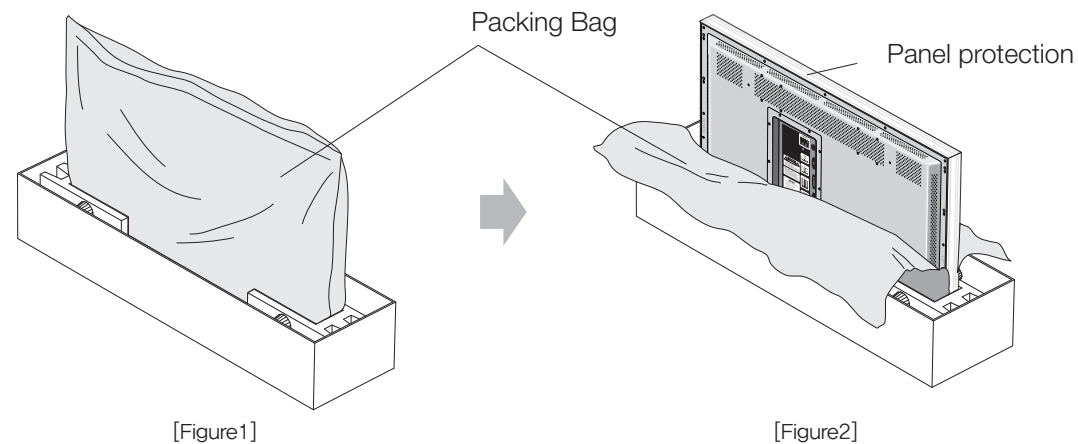


2. How to Install

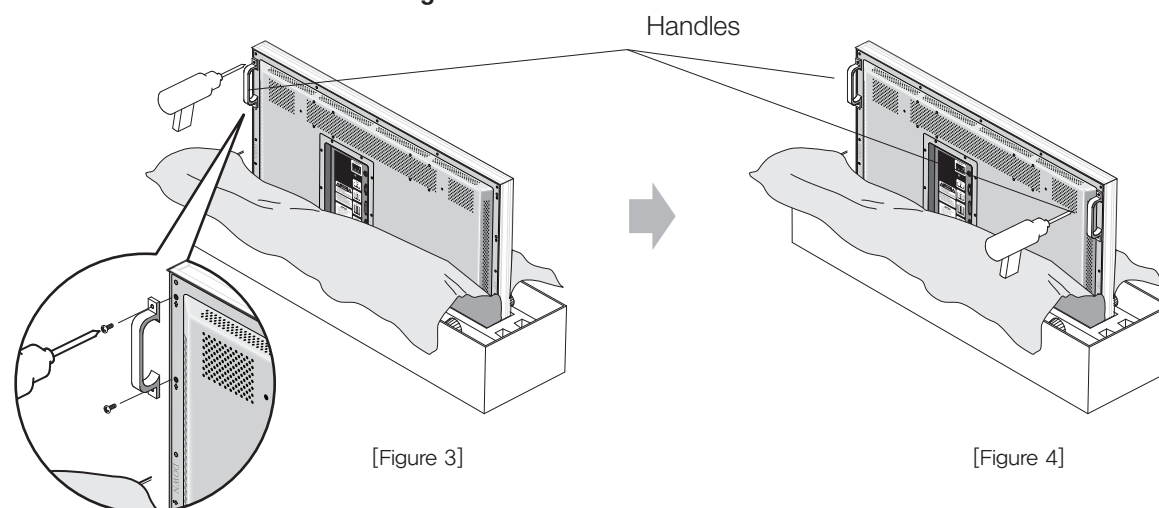
- Install this set only at a location where adequate ventilation is available.

How to assemble handles

1. Product is packed in a box as shown in Figure 1.
2. Please carefully remove the Packing Bag with a knife or a pair of scissors.
 - Please check front and rear side before you cut the bag to prevent any damages on panel or set.

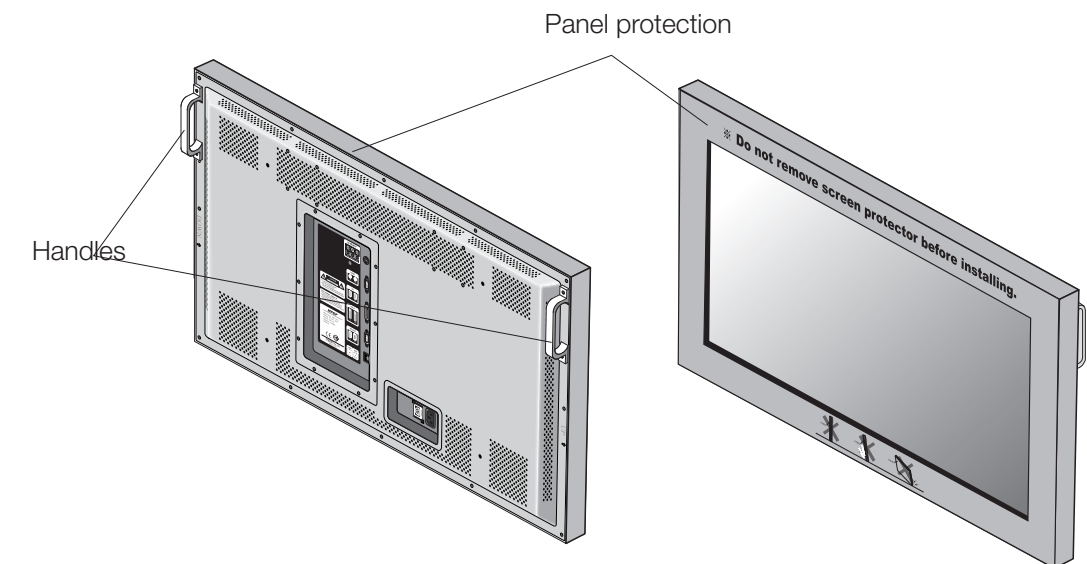


3. Please assemble handles with the bolts that are in the accessory box to the rear side as shown in the figure.



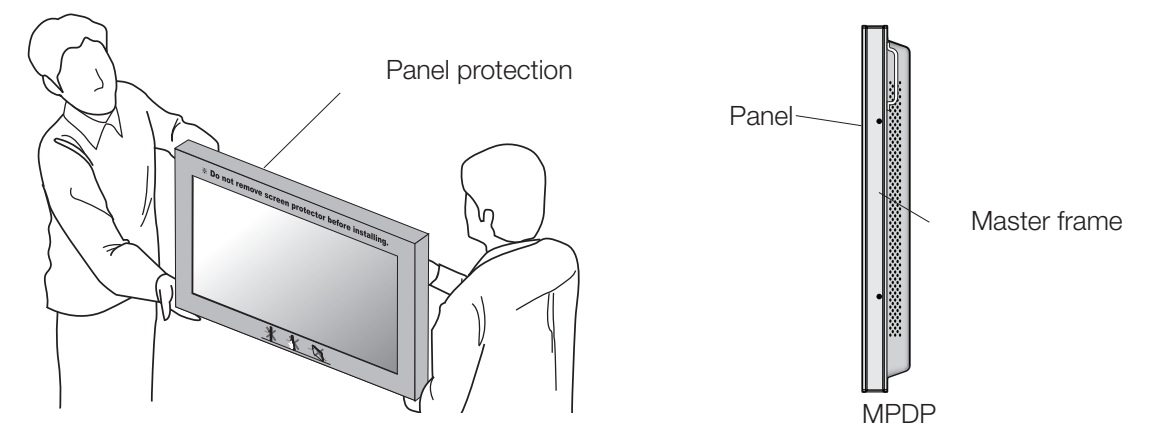
How to move MPDP

1. 2 people hold each handle on product's back side.



2. It needs two people to carry or install this product.

- Please do not grab the panel, but grab bottom of master frame when you carry or install the products.
- Please use gloves when you carry or install the products.

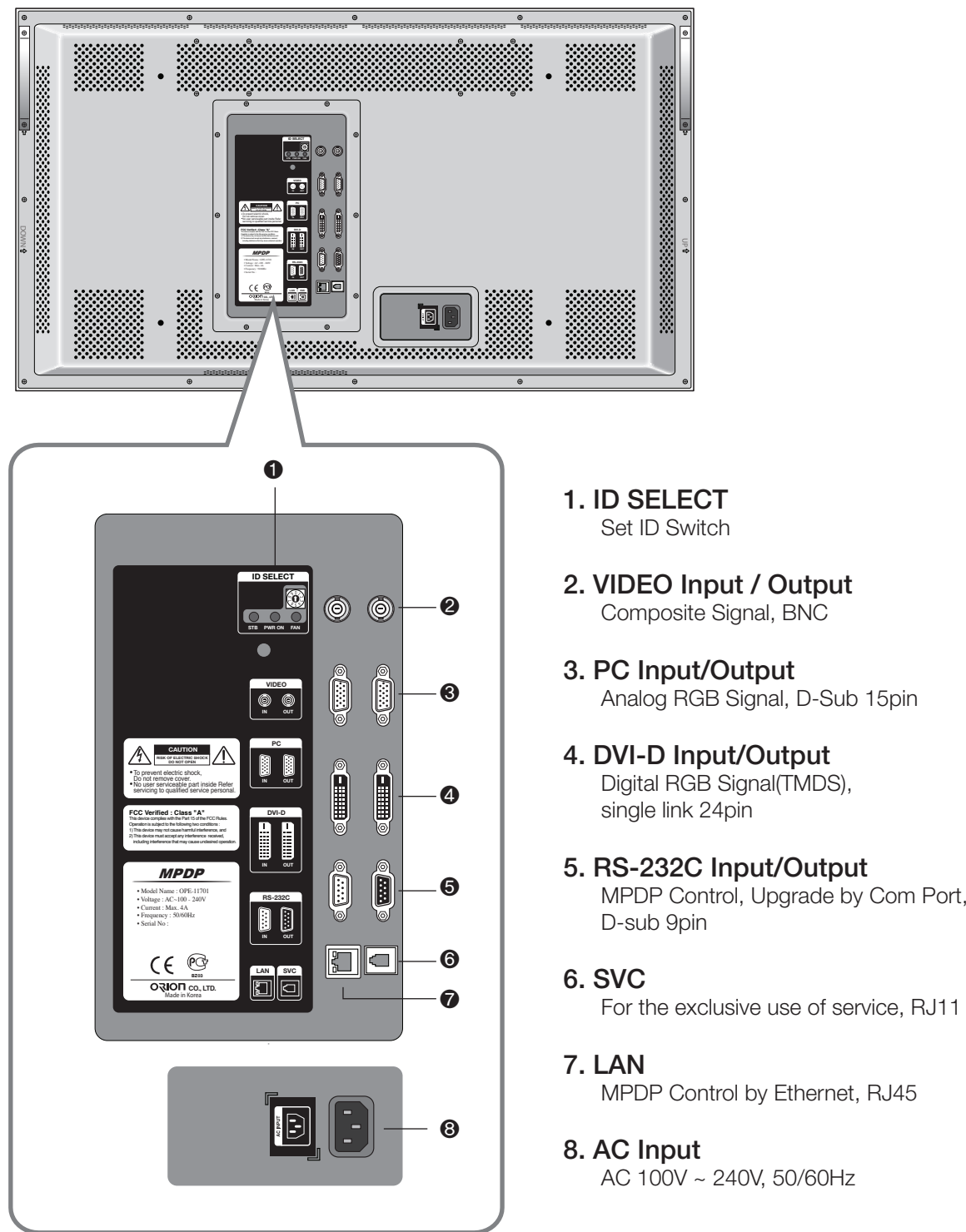


※ Attention :

- Do not remove the panel protection pad until a set is completely installed on a stand or a wall hanger.
- Please carefully remove Panel protection pad to prevent any damages on the product .
- Please make sure to use panel protection when you move, carry or rent MPDP.

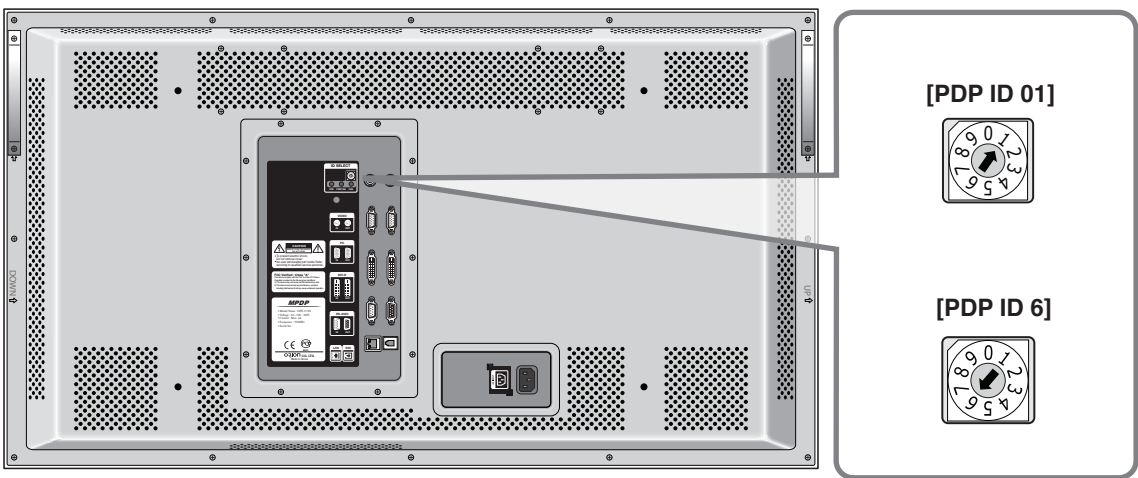
3. Guidance for Users

Input/Output Terminals



Set ID Switch Setting

- Example of ID Switch setting
- You can set ID with 3 rotary switches as shown in the following figure.



- ※ When you set ID of MPDP set, power cable must be disconnected. If power cable is not disconnected during ID setting, MPDP set may be operated with the previous ID and it may cause abnormal behavior.
- ※ For stable operation, wait for at least 10 seconds prior to use MPDP control program after the first AC power connection.

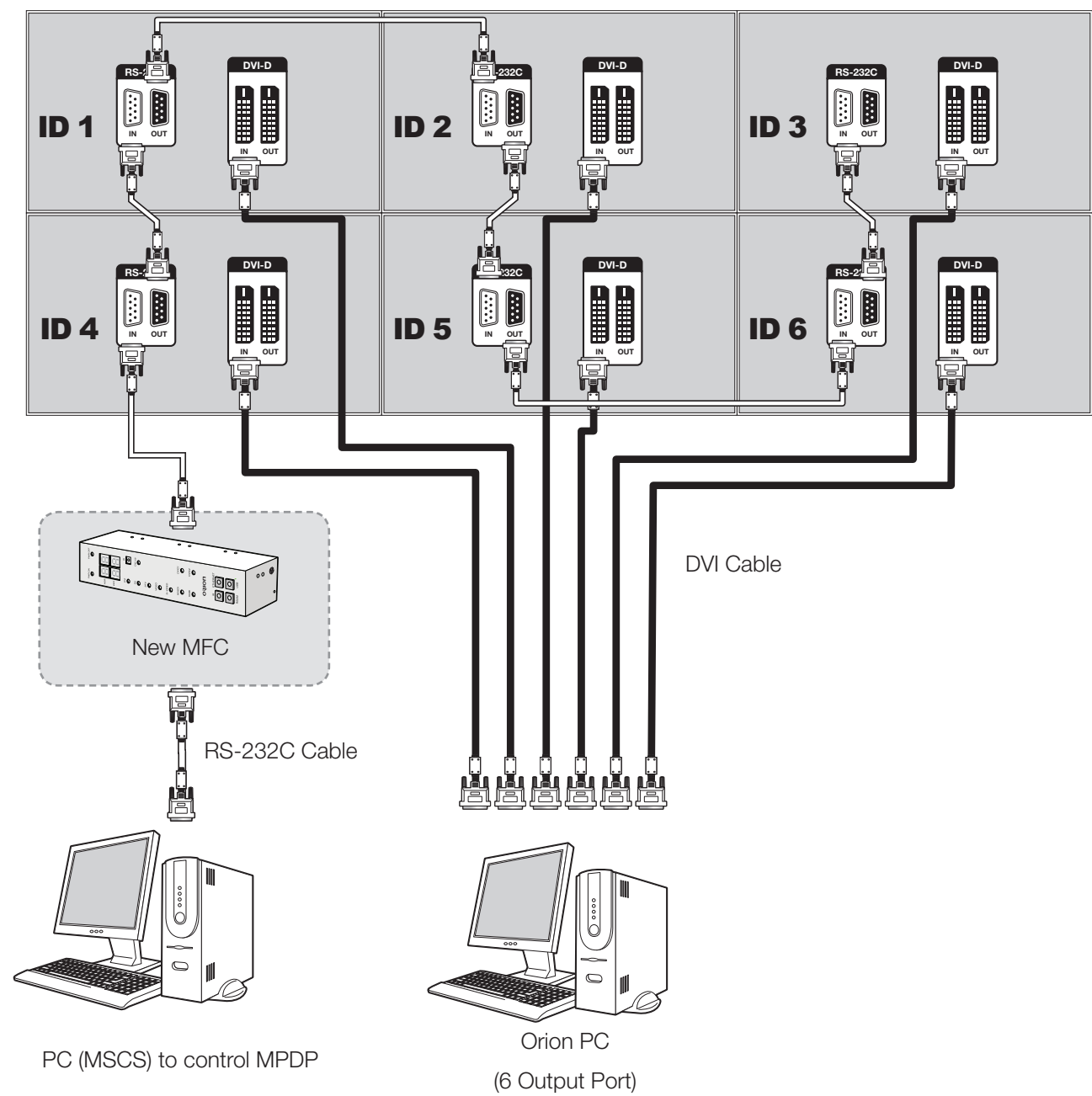
• LED Indication ON ○ OFF ● BLINKING ●

LED Indication	Description
	No Power.
	Insert power cord(Stand-By state)
	Power On By MSCS. The PWR ON LED blinks continually.
	Power Off by MSCS Program. (System ready).
FAN : Normal – LED Off, Abnormal – LED On IF FAN LED is turned on, please check FANs.	

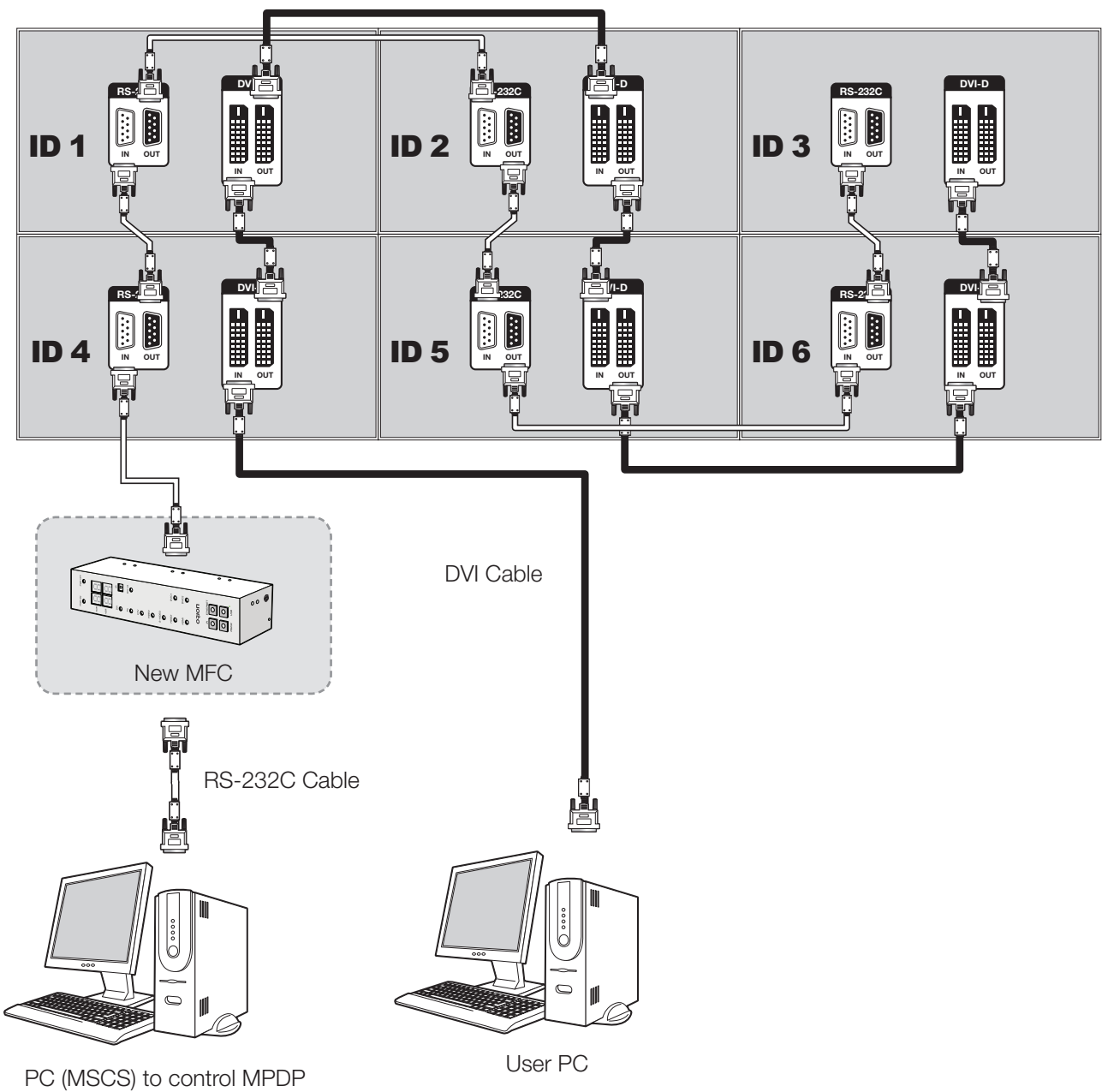
4. Cable Connection

- Do not connect/disconnect cables while MPDP or other external equipments are turned on.
- First turn off the power all the attached equipment and make connections.

4.1. Connecting OROIN PC



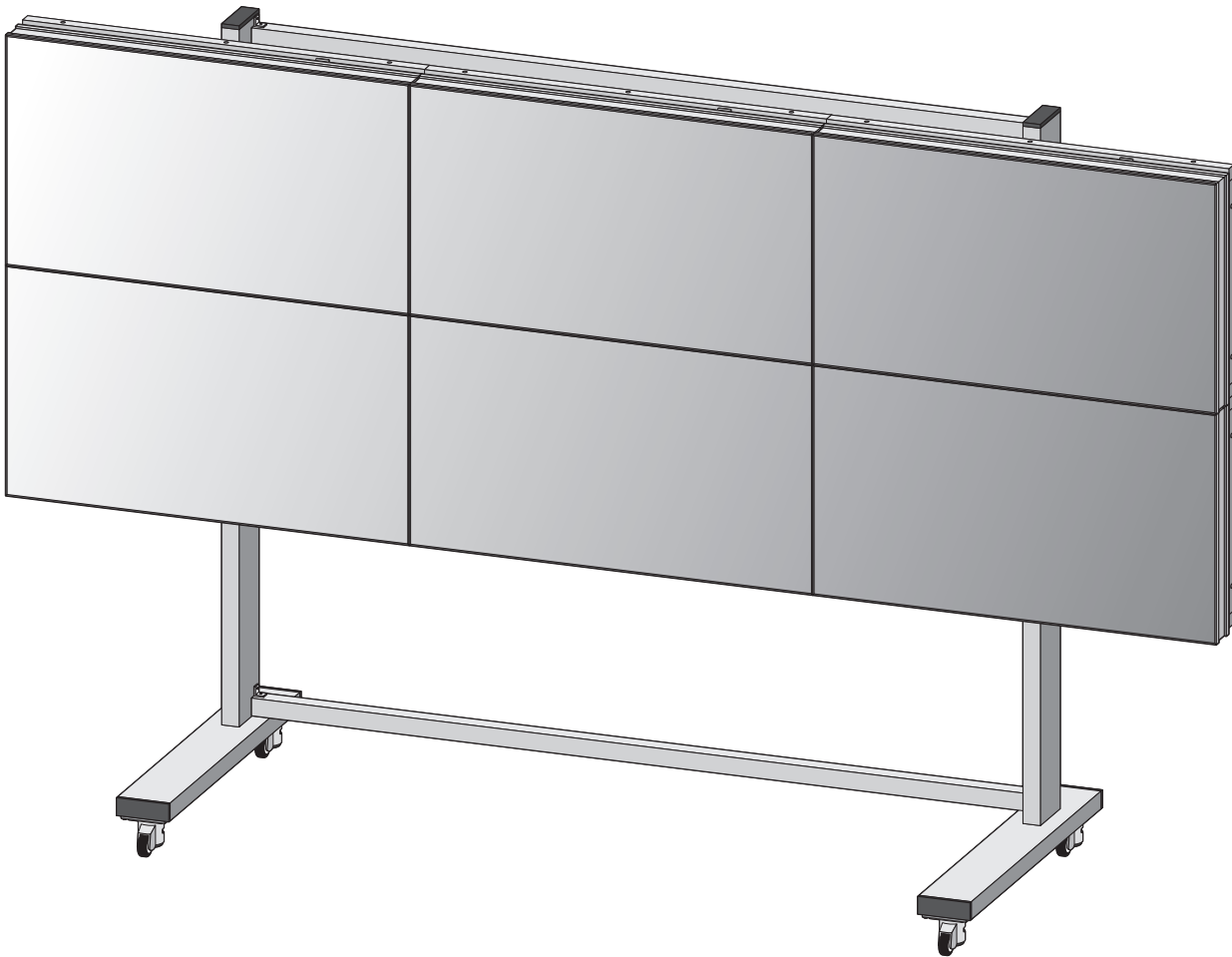
4.2. Connecting the other PC



5. Installation

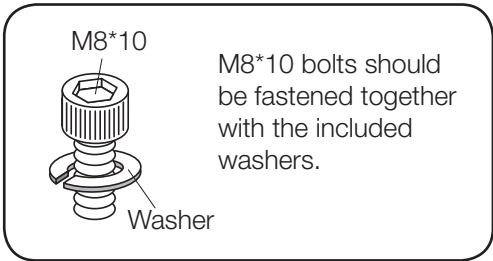
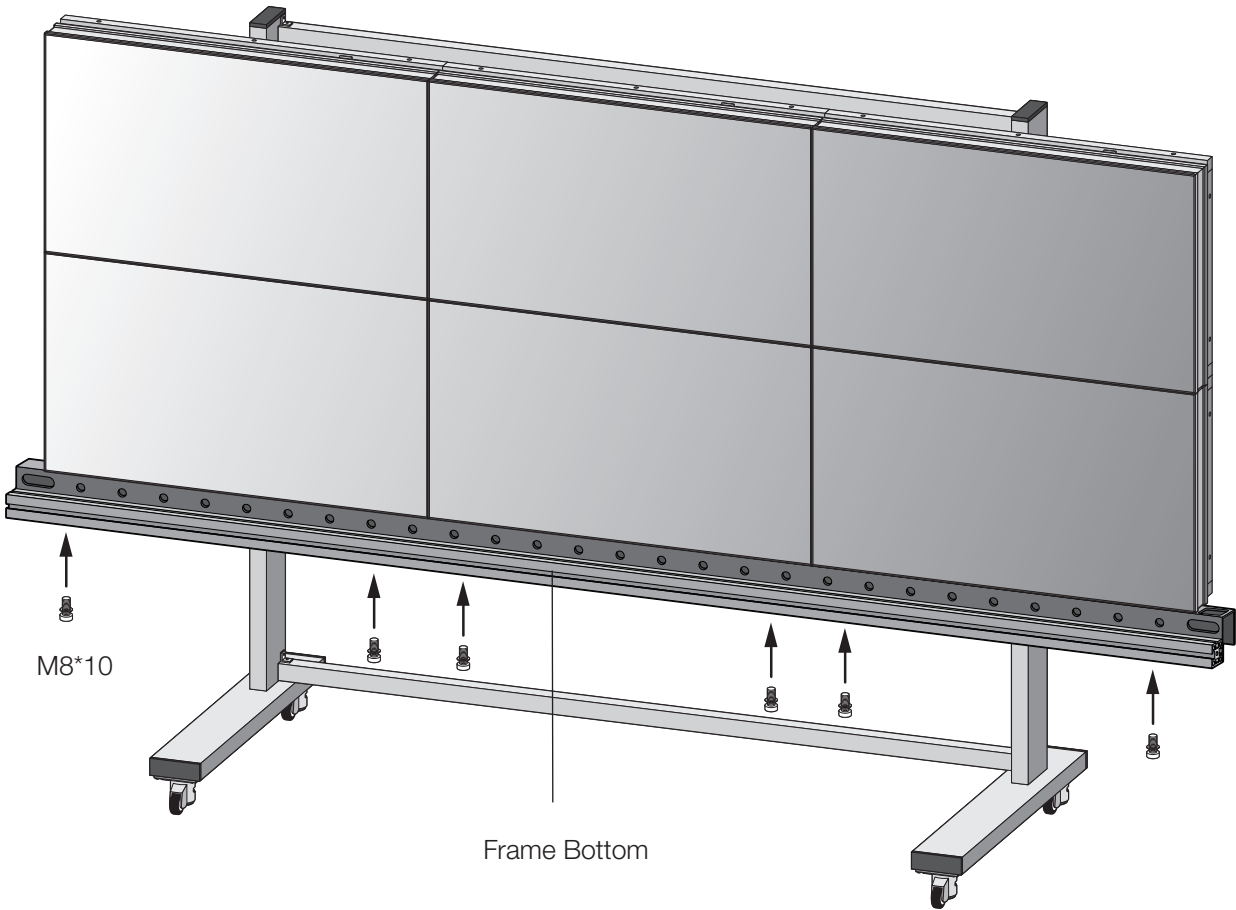
5.1. Assembly the product to the Stand

- Please refer to the user manual of Main Frame and Stand for assembling instruction for them.
- The installation place must be flat without an inclination and the installation work requires 2 or more people.
- Prior to installation, please fix the stand wheels.
- Check the operation status of MPDP sets before installation.



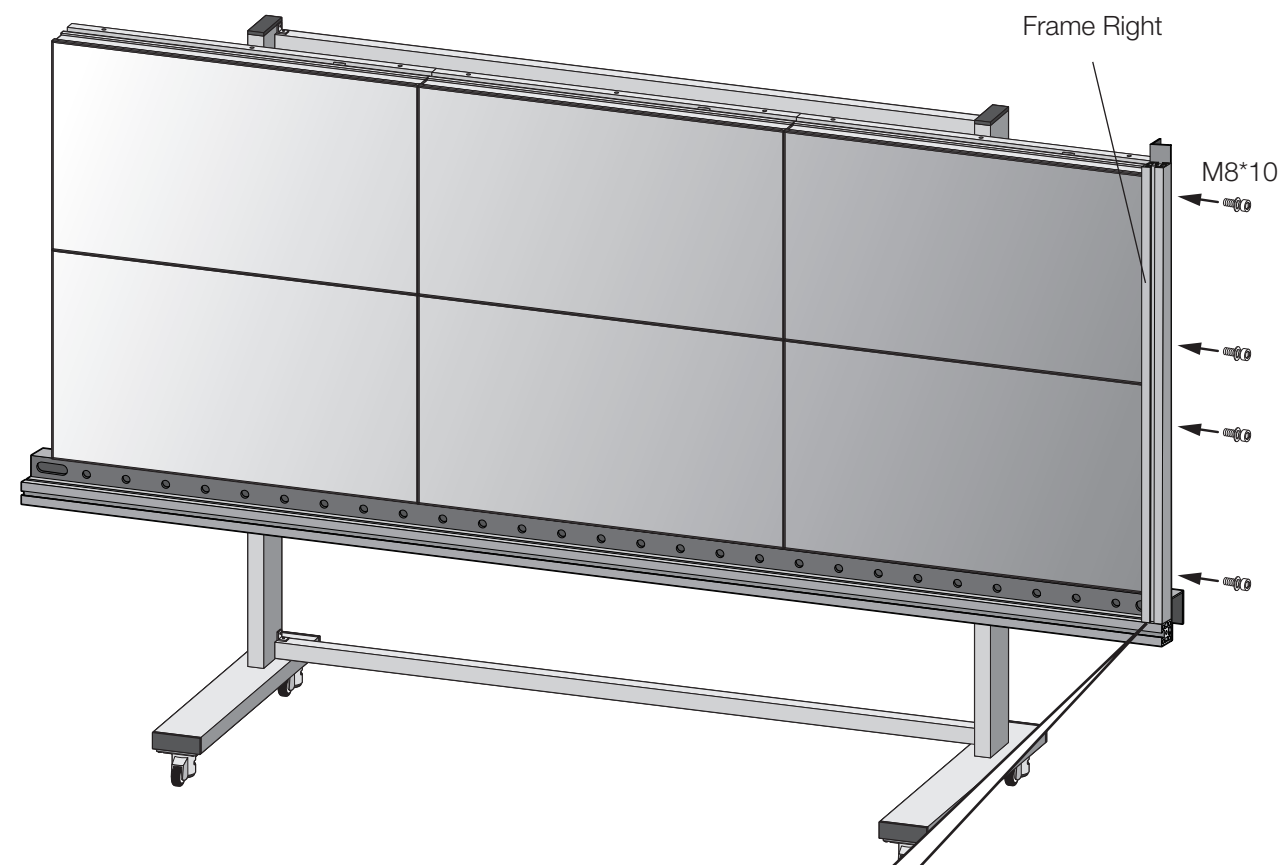
5.2. Fix “Frame Bottom” to the bottom side.

- Fix Frame Bottom to the bottom side of the sets with M8*10 bolts.
- The work must be done with extra care, because MPDP panels can be damaged if Frame Bottom bumps into them.

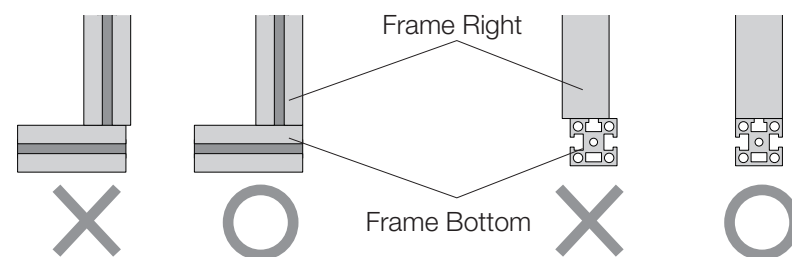


5.3. Fix “Frame Right”

- Fix Frame Right to the right side of the sets with M8*10 bolts as shown in the picture.
- The work must be done with extra care, because MPDP panels can be damaged if Frame Right bumps into them.

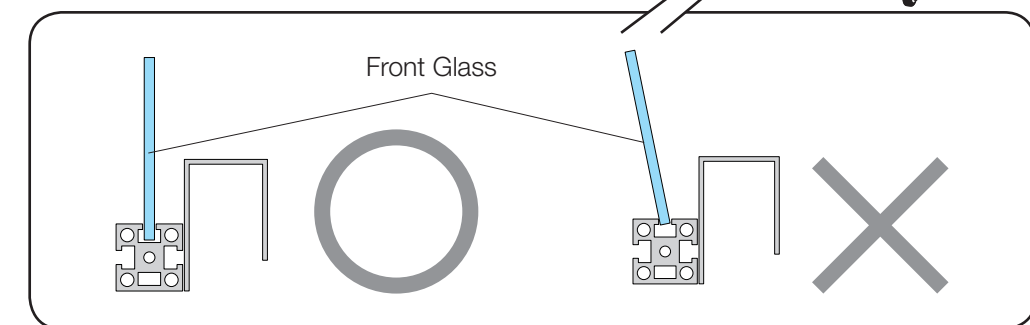
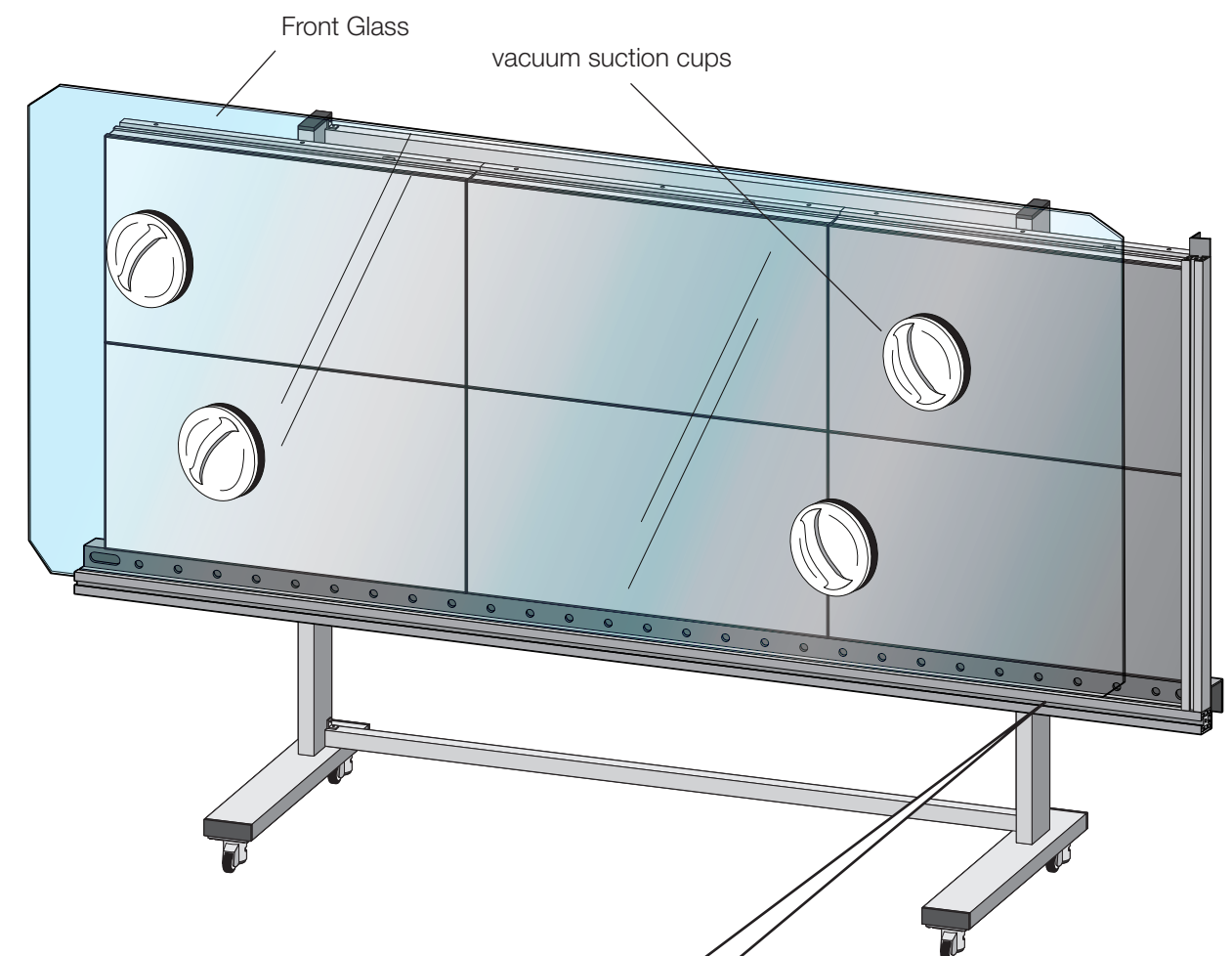


The corner of the Frame must be aligned correctly.



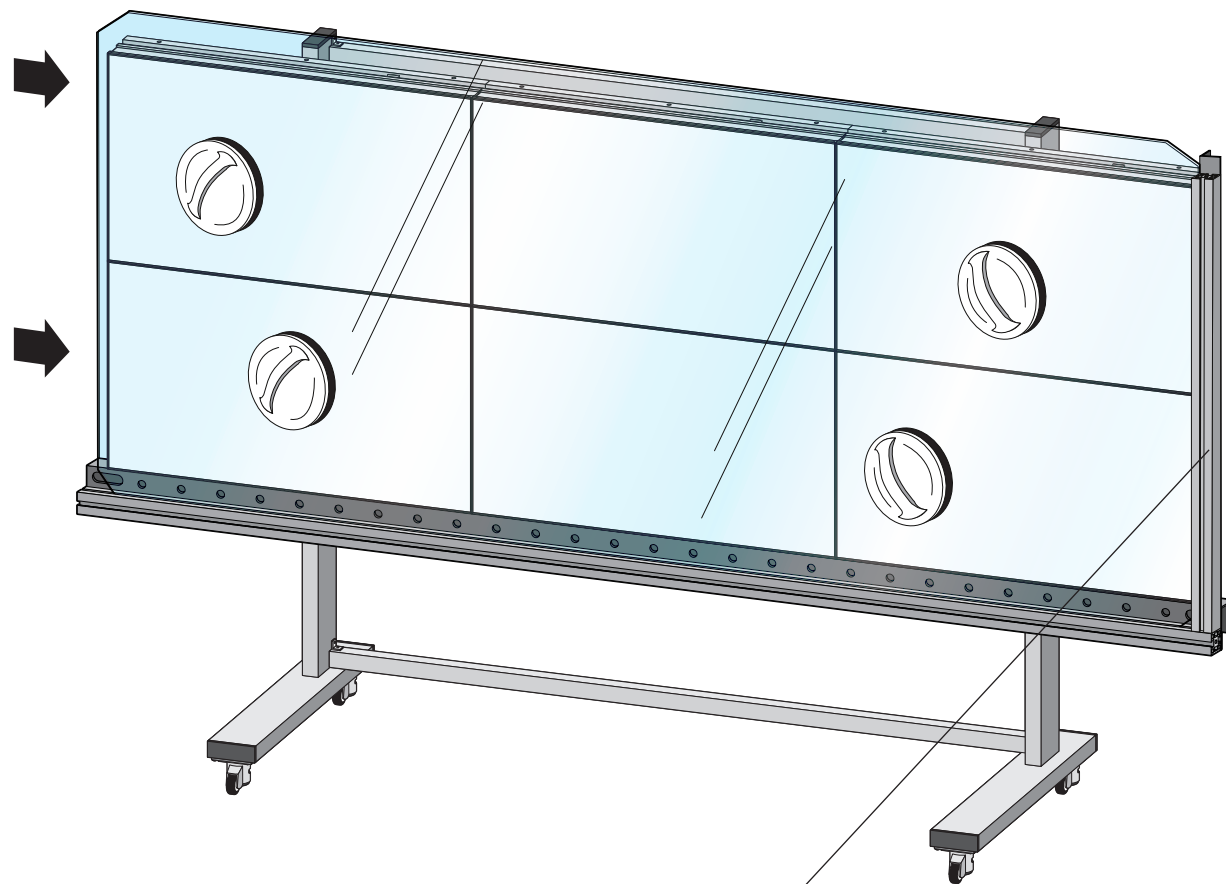
5.4. Front Glass assembly

- 2 or more people lift the glass with vacuum suction cups and insert to the groove at Frame bottom.
- Glass should be lifted perpendicular manner and insert properly.
- MPDP panels can be damaged if the front glass bumps into them.

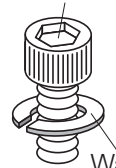


5.5. Slide the front glass toward the right end.

- Slide the glass in the groove of Frame Bottom toward the vertical groove in the Frame Right.
- The front glass must be supported with hands while slide toward Right end or it may be inclined to front side and fall down.



M8*10



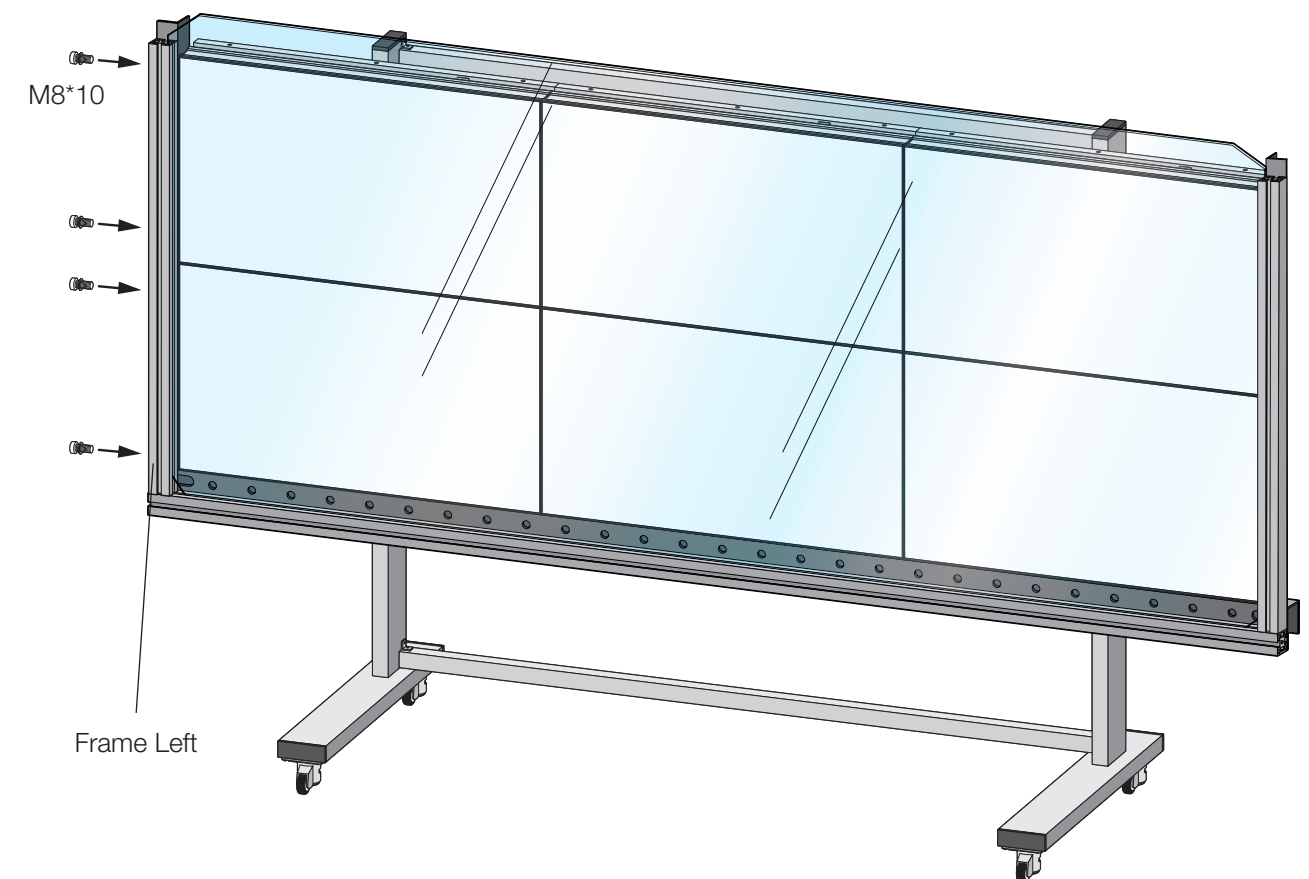
Washer

M8*10 bolts should be fastened together with the included washers.

Slide the glass in the groove of Frame Bottom toward the vertical groove in the Frame Right.

5.6. Fix “Frame Left”

- Fix Frame Left to the left side of the sets with M8*10 bolts as shown in the picture.
- The work must be done with extra care, because MPDP panels can be damaged if Frame Left bumps into them.



M8*10

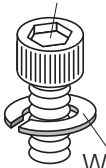
M8*10

M8*10

M8*10

Frame Left

M8*10

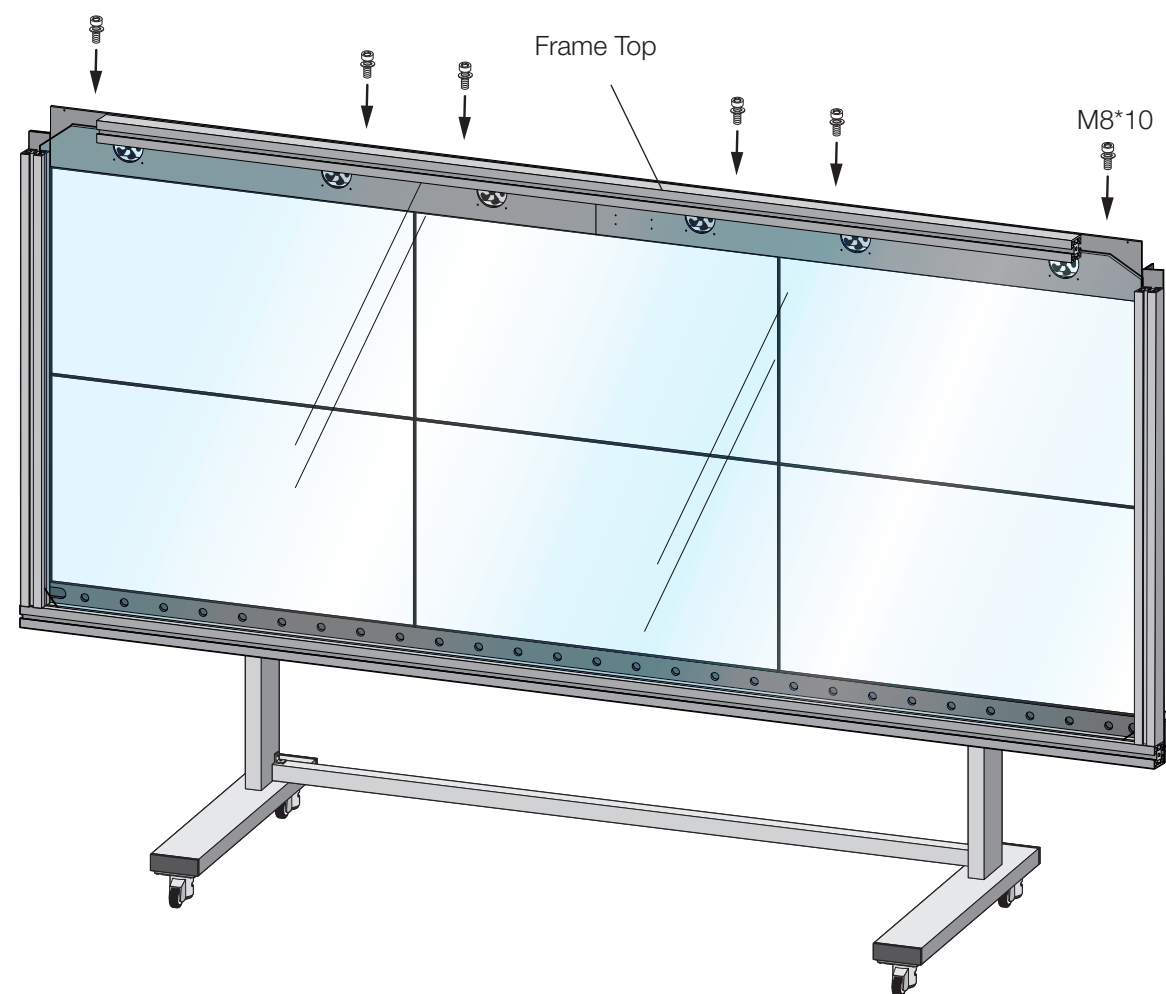


Washer

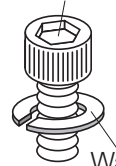
M8*10 bolts should be fastened together with the included washers.

5.7. Fix “Frame Top”

- Fix Frame Top to the top of the sets with M8*10 bolts as shown in the picture.
- The work must be done with extra care, because MPDP panels can be damaged if Frame Top bumps into them.



M8*10

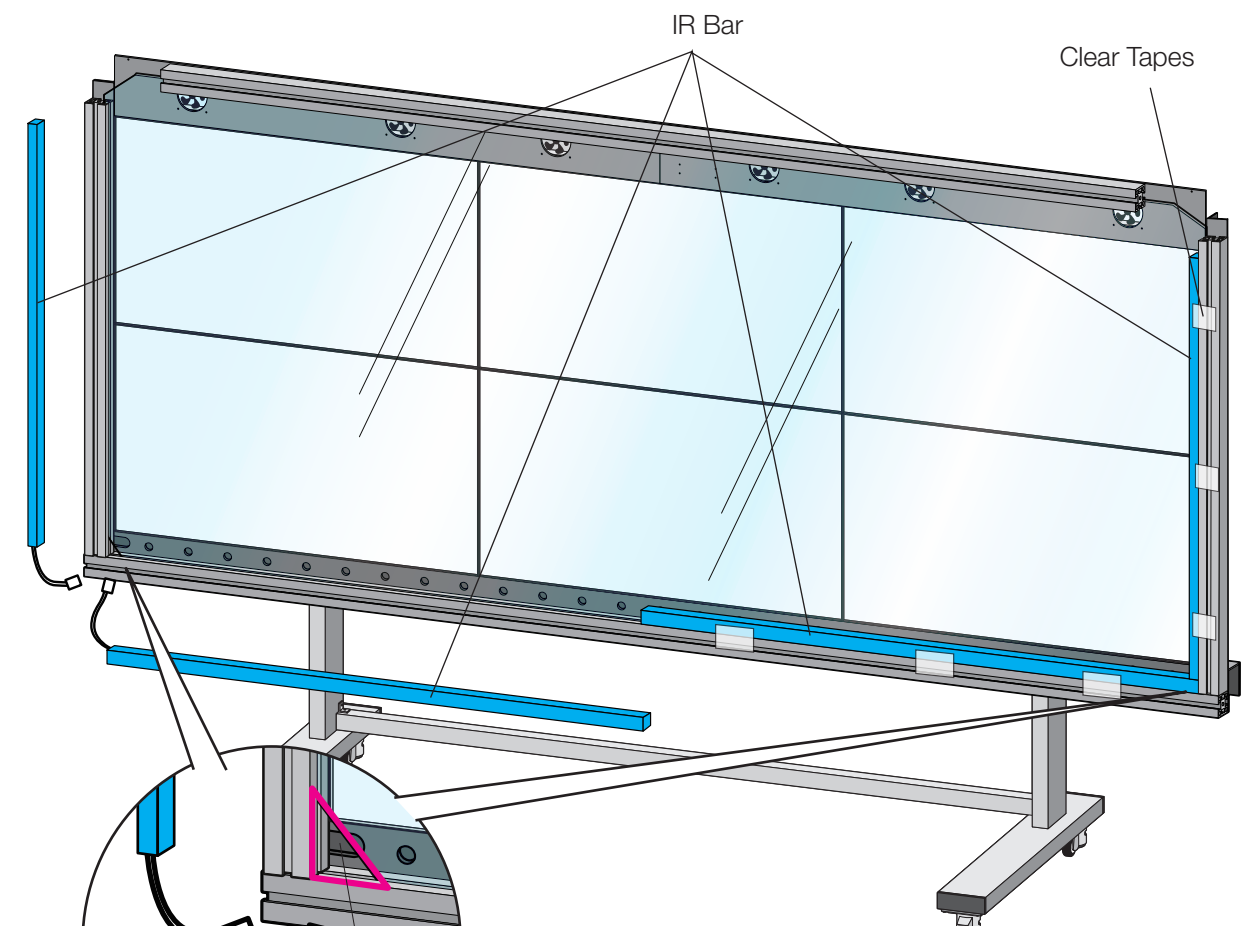


Washer

M8*10 bolts should be fastened together with the included washers.

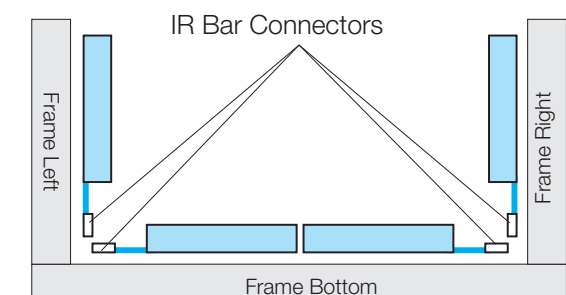
5.8. Fix “IR Bar”

- Three IR Bars are provided. The long one is for bottom side and two short ones are for left and right sides.
- The IR Bar connectors should be drawn out to the back side through the holes at the lower corners.
- The IR Bars should be fixed with the clear tapes.



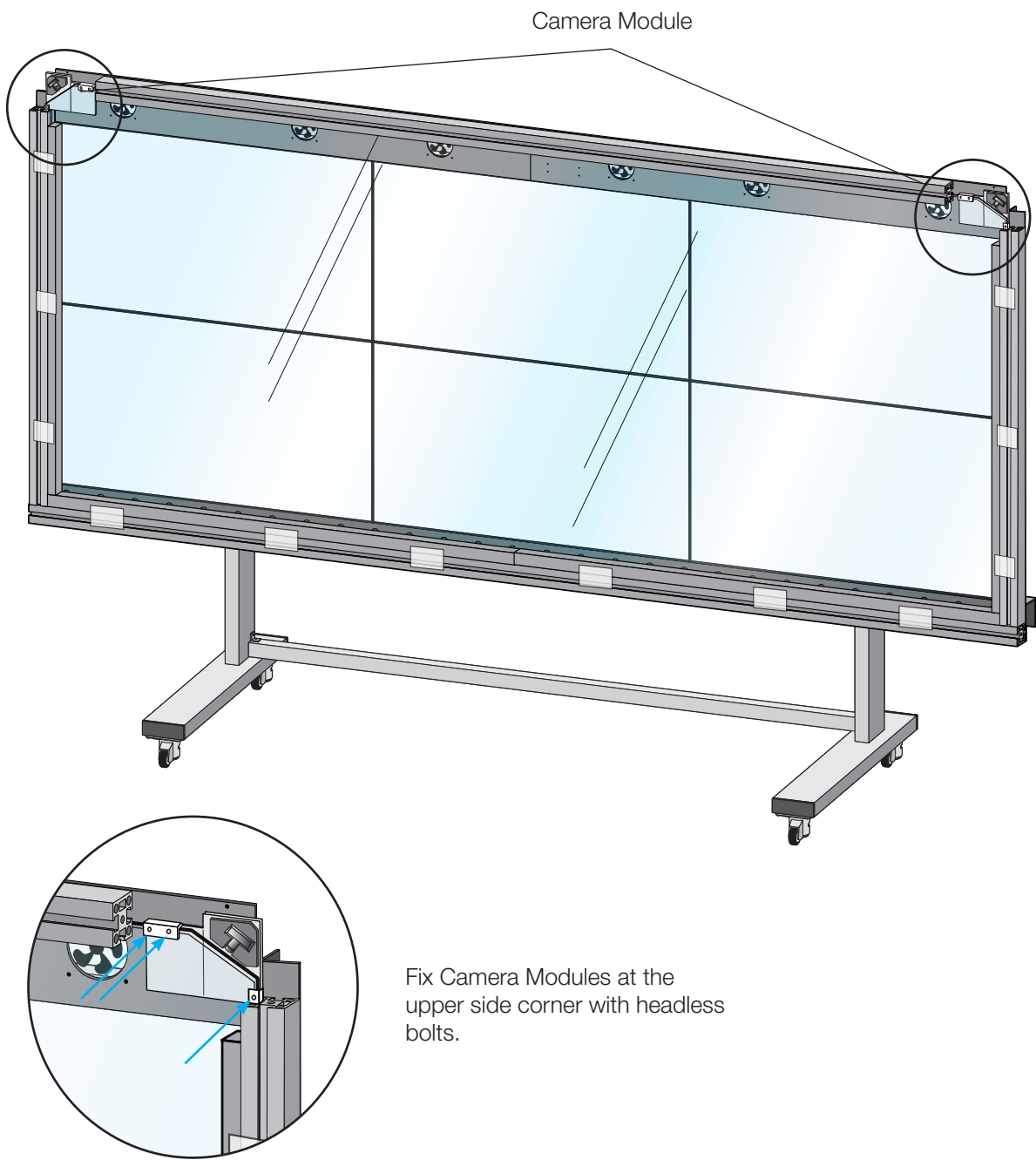
Insert the IR Bar Connectors to the Frame Bottom Hole and fix with clear tapes.

The IR Bar Connectors should be fixed toward Frame sides.



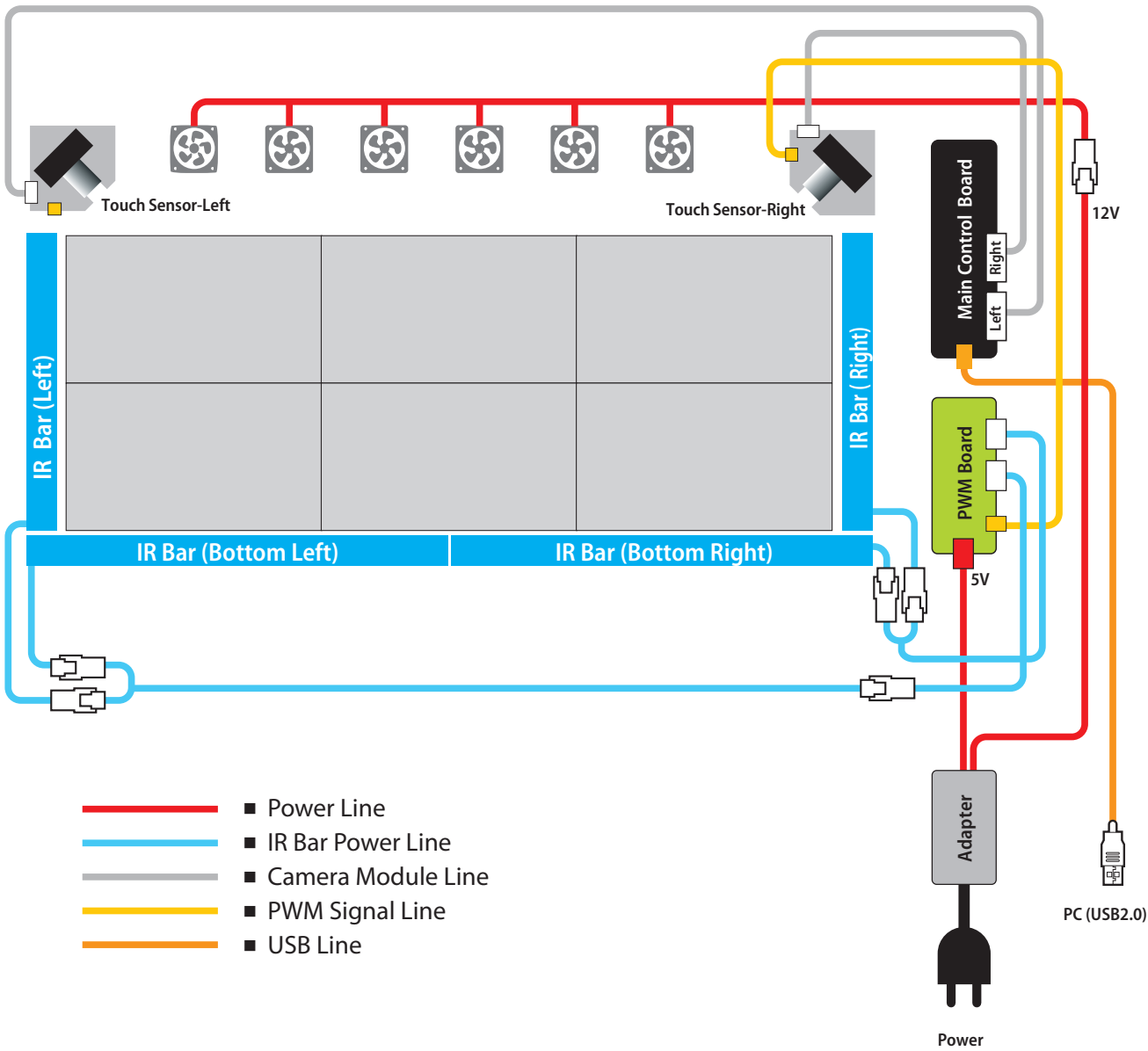
5.9. Fix “Camera Module”

- Fix Camera Modules at the upper left and the upper right corners with headless bolts as shown in the picture.



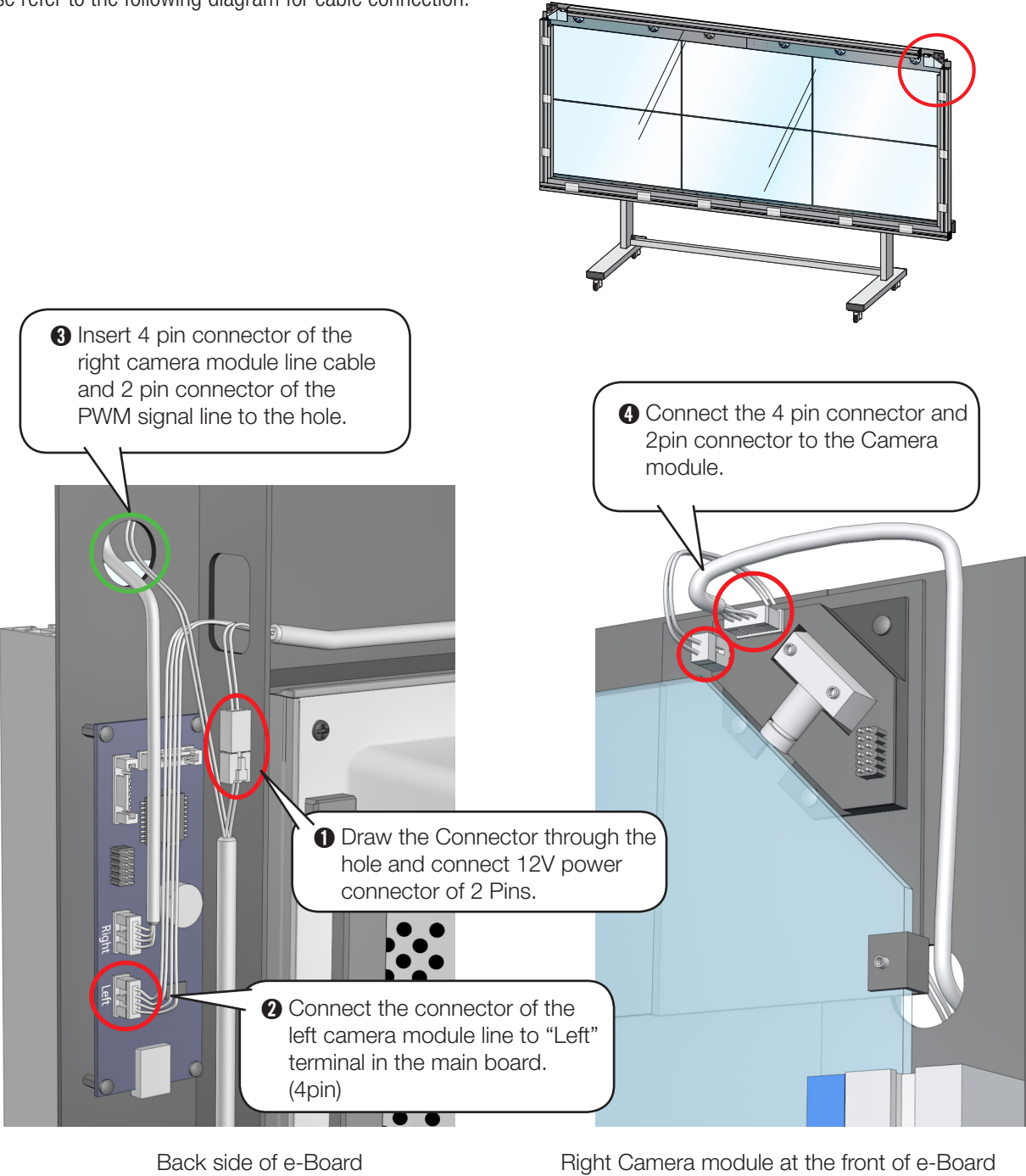
5.10. e-Board Connection Diagram

- Please refer to the following diagram for cable connection.



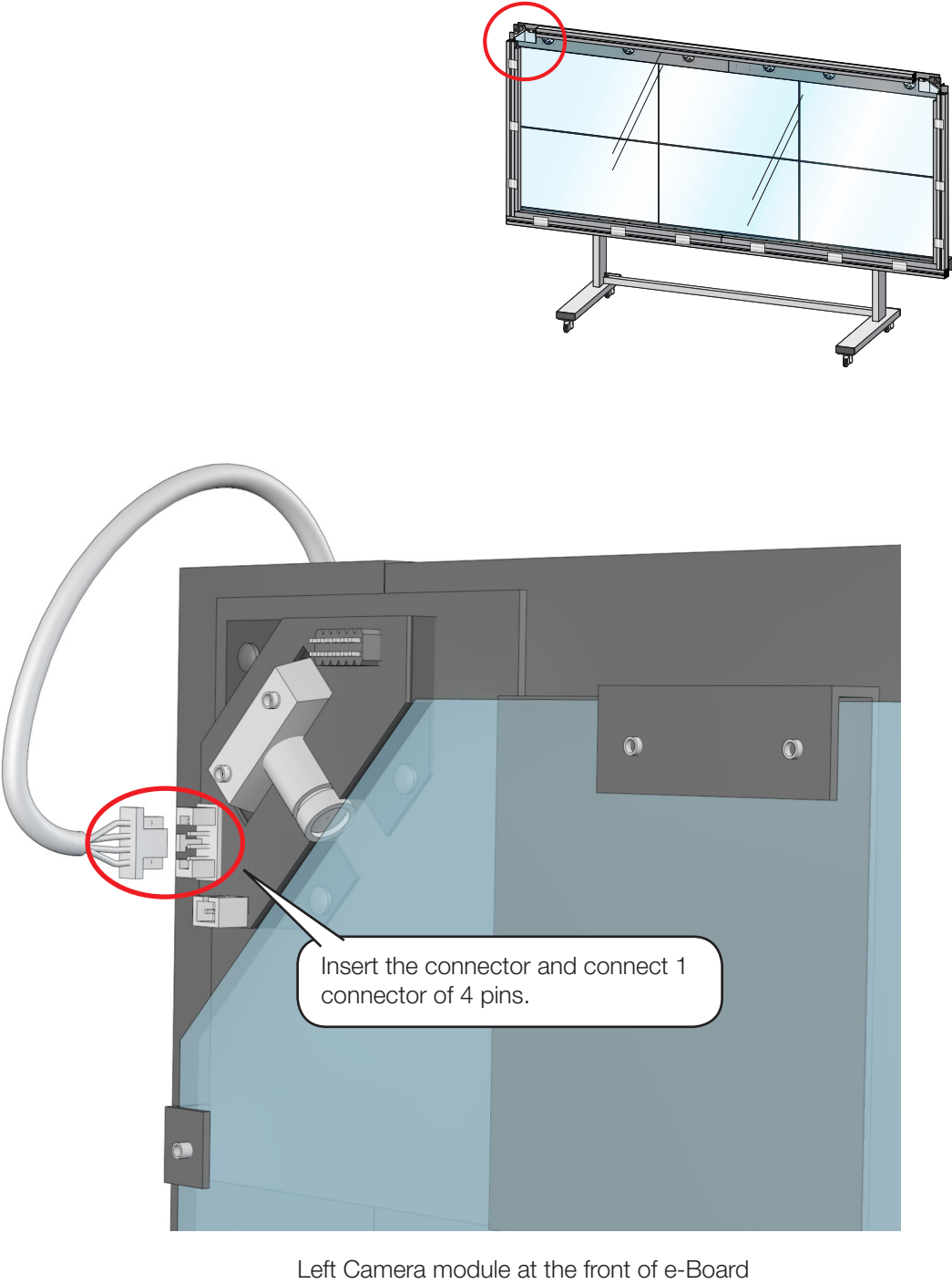
5.11. Connect Fan Cable and Right Camera Module Cable

- Adaptor, Camera Module, IR Bar, Fan, and USB(PC) are positioned behind Frame Right.
- Please refer to the following diagram for cable connection.



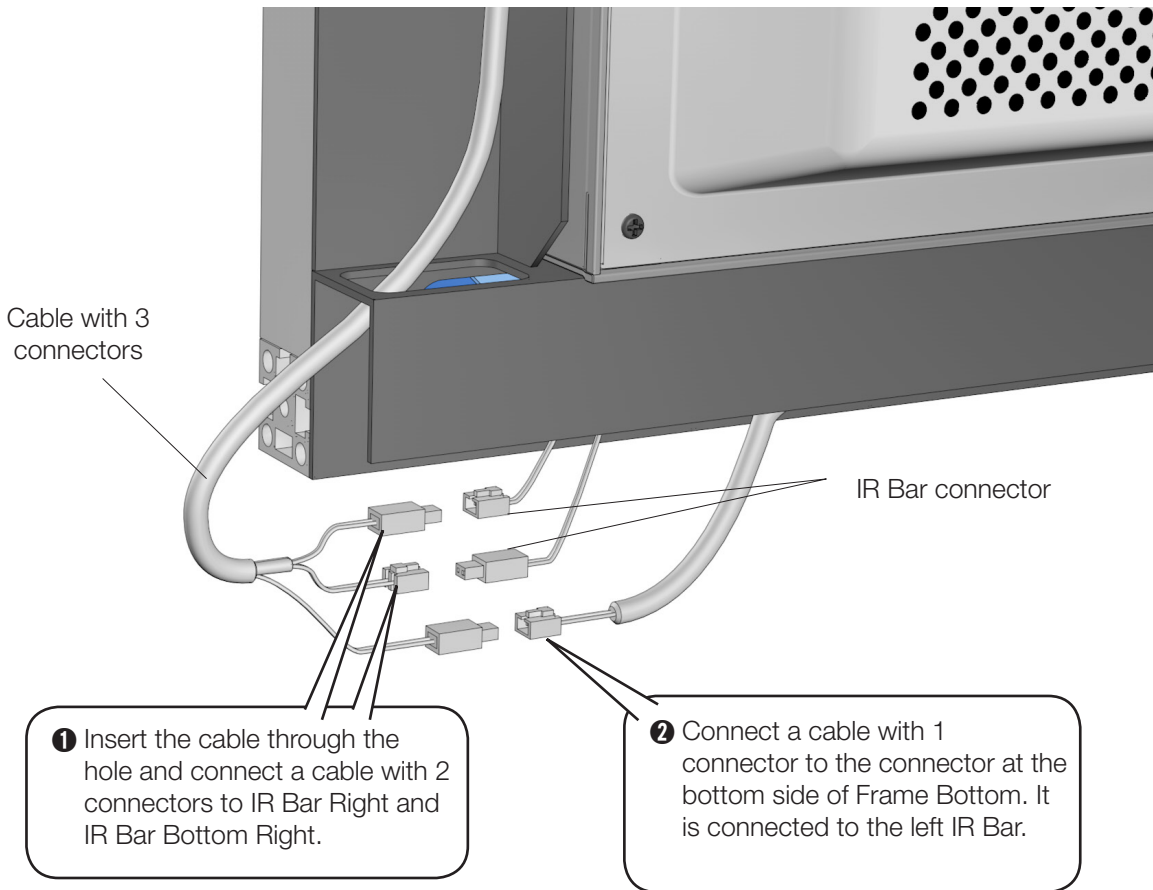
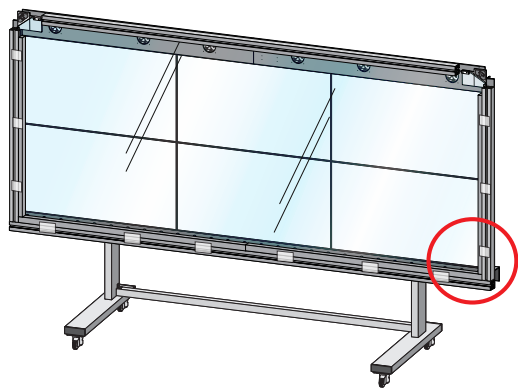
5.12. Connect Left Camera Module Cable

- Please refer to the Following diagram for cable connection.



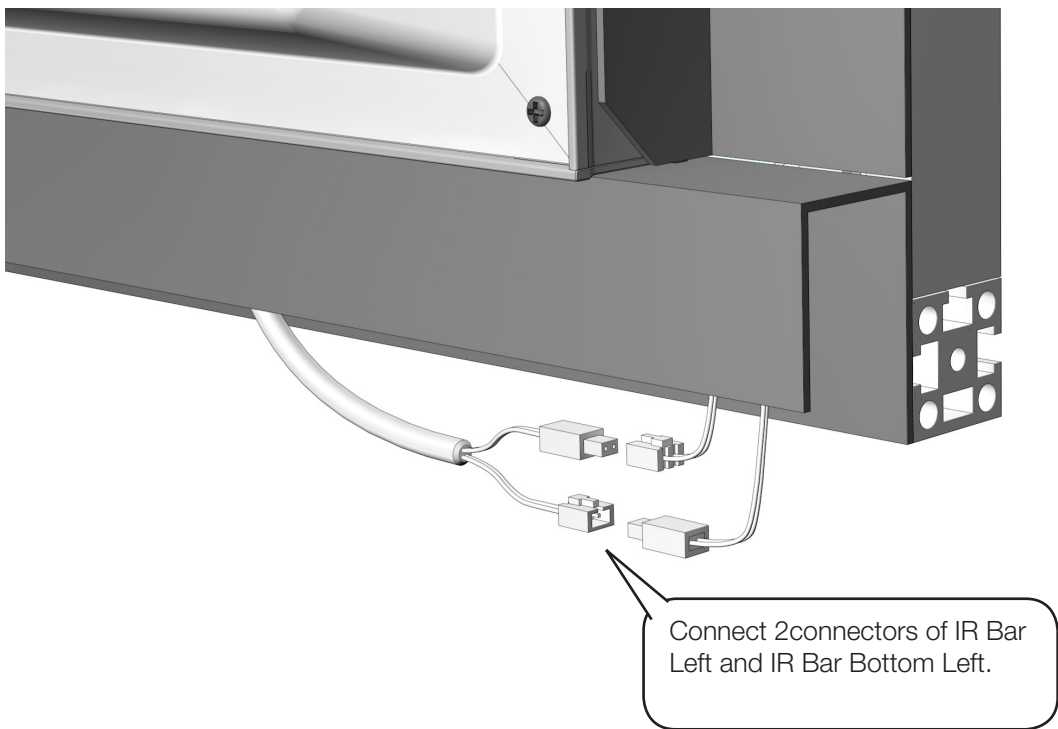
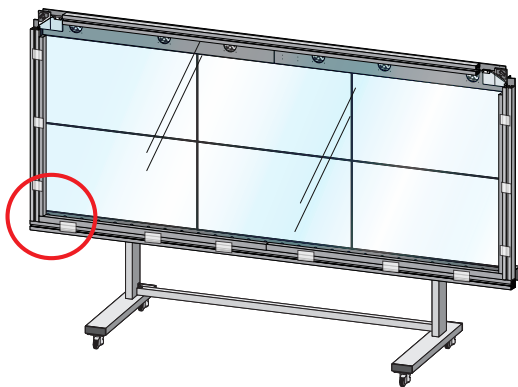
5.13. Connect Right IR Bar and Bottom Right IR Bar

- Connect a cable with 2 connectors which are drawn through Frame Bottom to IR Bar Right and IR Bar Bottom Right
- Connect the other cable with 1 connector to the left IR Bar



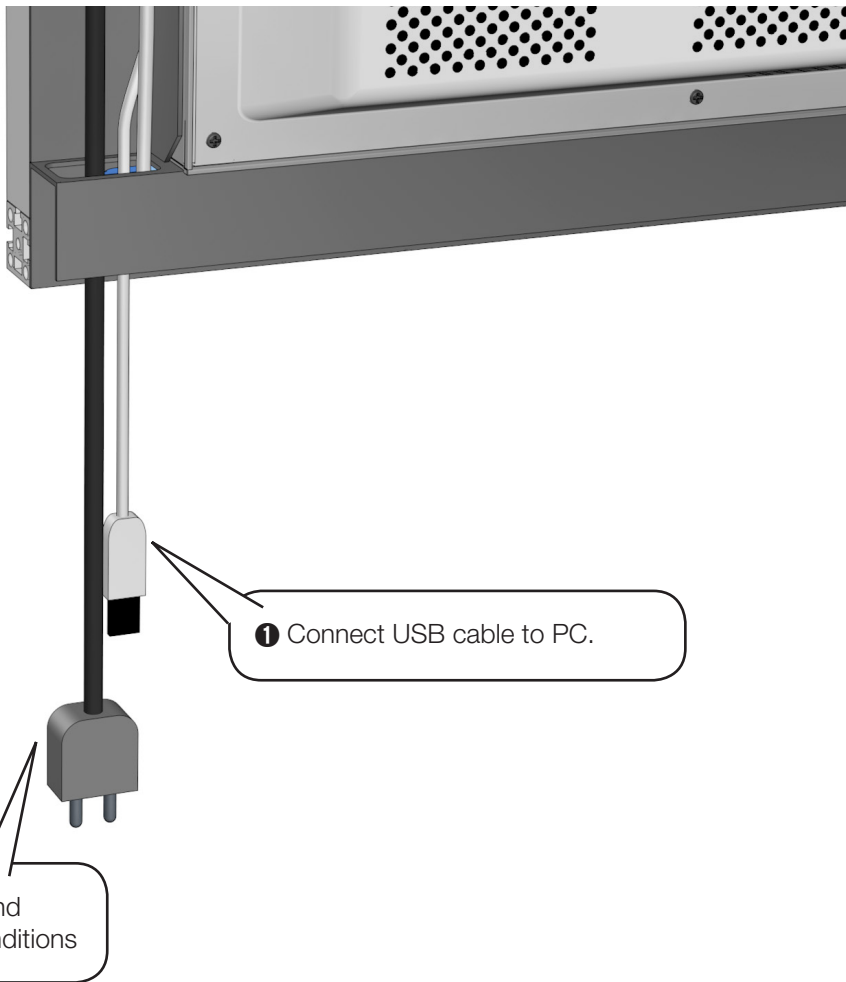
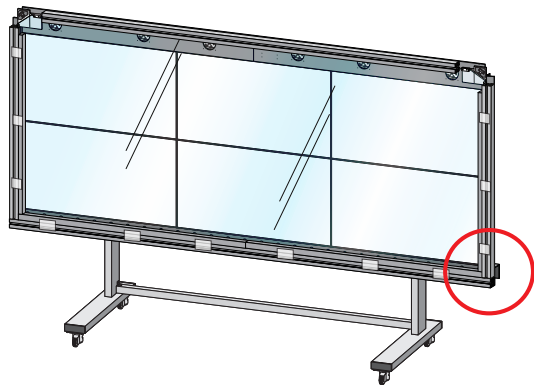
5.14. Connect Left IR Bar

- Connect 2 connectors of Left IR Bar and Bottom Left IR Bar.



5.15. Connect Power Cable and USB Cable

- Connect USB cable to PC.
- Connect Power cable after all cable connections are completed.

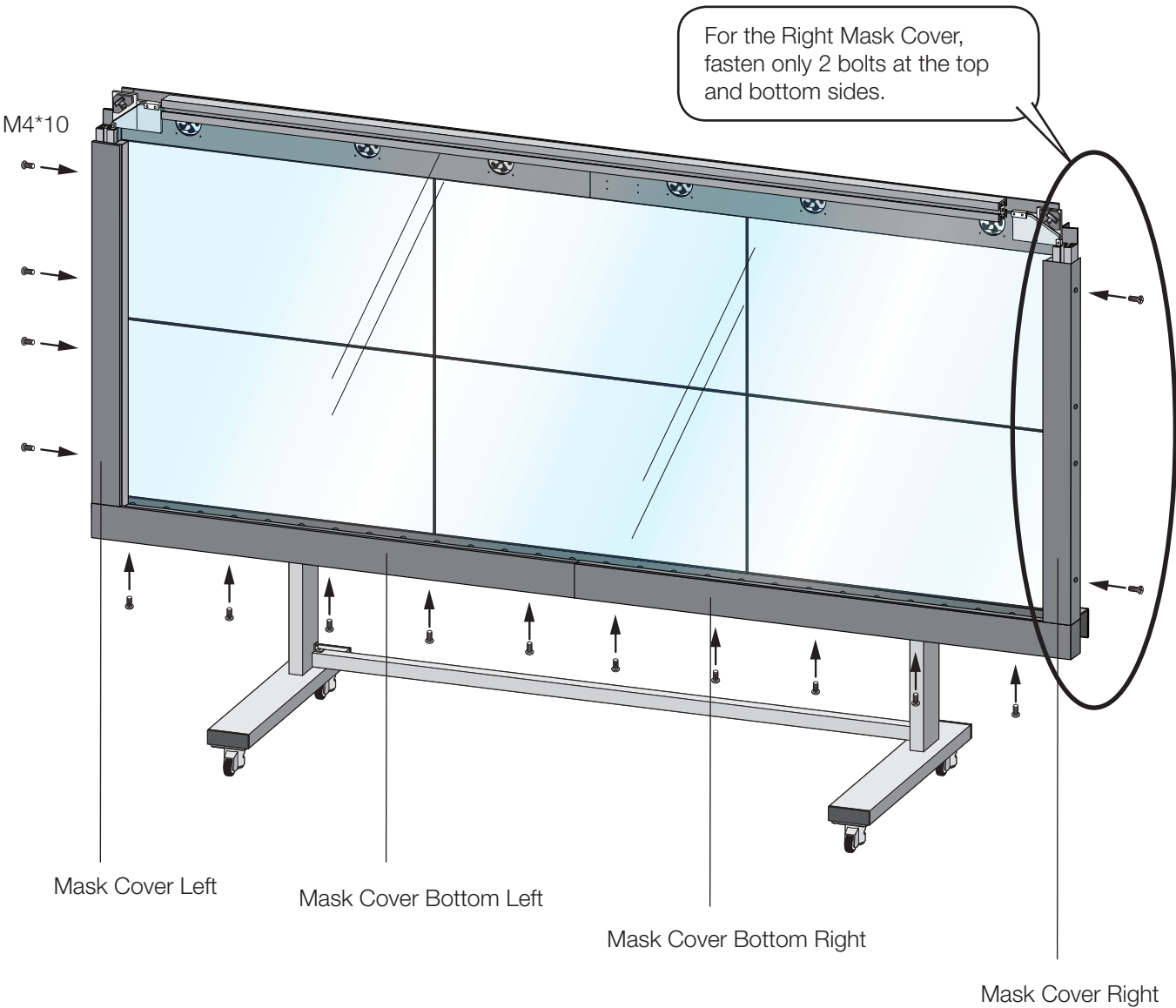


5.16. Checking IR Bar Operation

- Check the operating status of IR Bar. (See "6.2. Sideview")
- If IR Bar works fine, proceed to next step.

5.17. Fix Mask Cover (Bottom, Left and Right)

- Fix the mask covers for Bottom, Left and Right, sequentially.
- Do not fix Mask Cover Top yet.

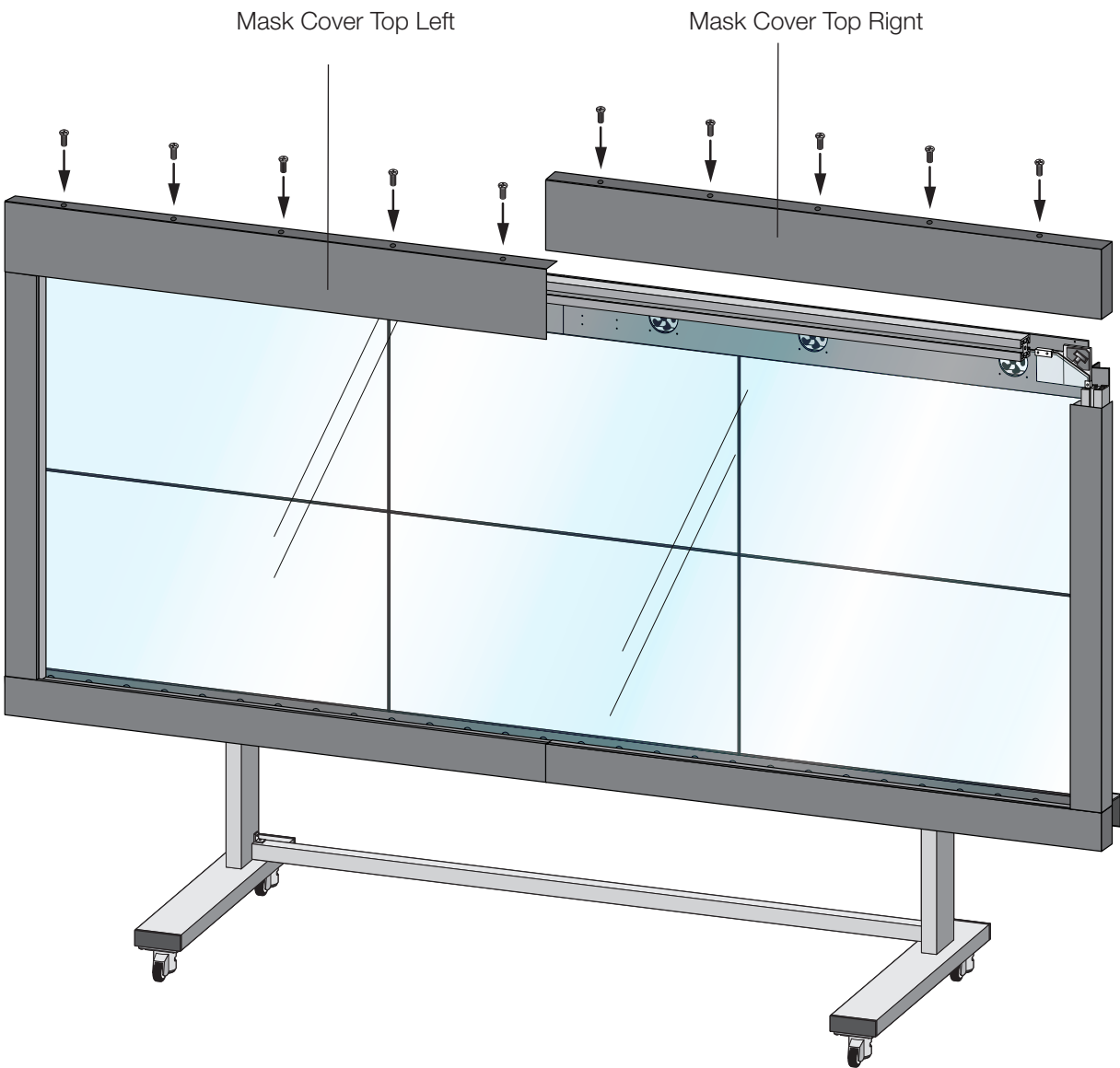


5.18. Camera Module Configuration

- Configure Camera Module and check the operating status.
- If it does not have any problem, proceed to the next step.
(See "6. Sensor Configuration")

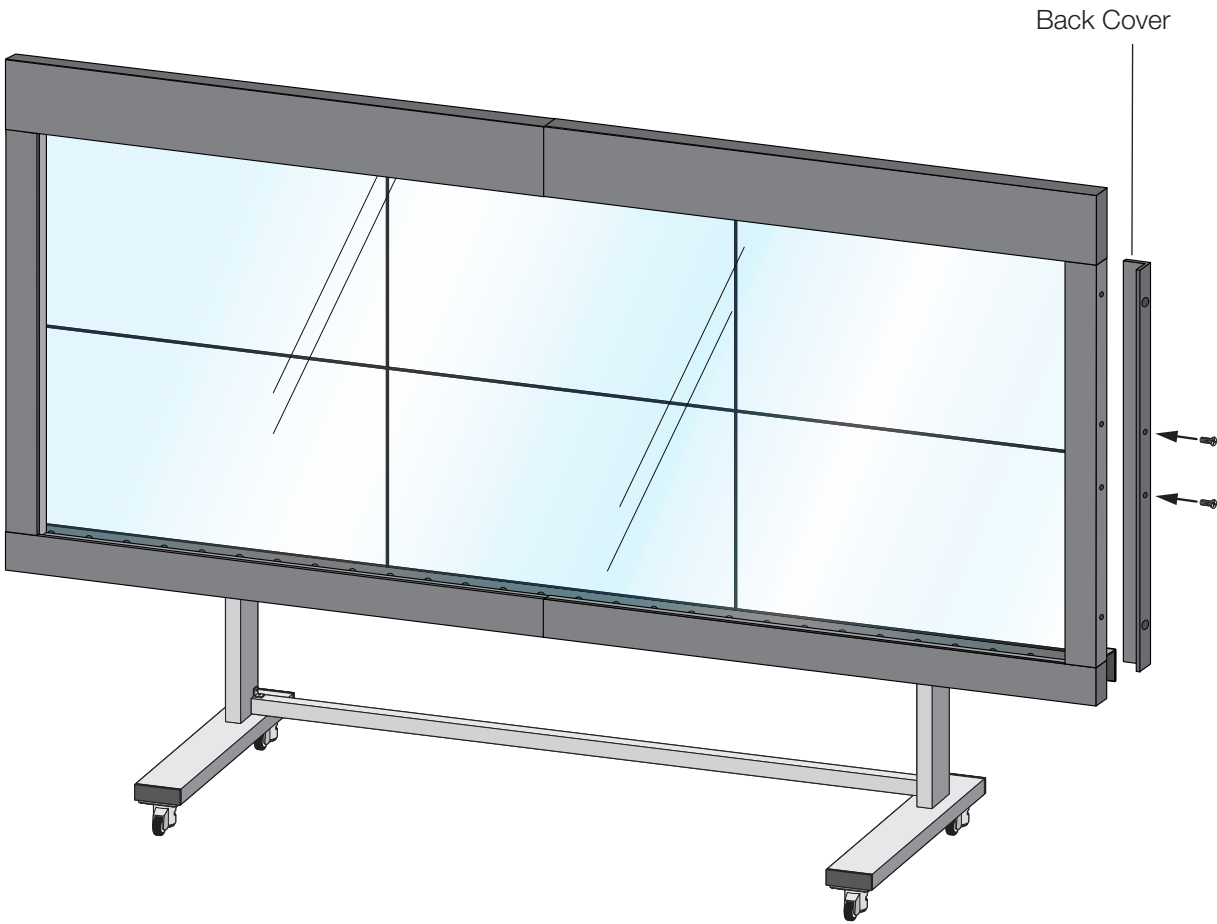
5.19. Fix Mask Cover Top

- Fix Mask Cover Top



5.20. Fix Back Cover

- After all the assembly work, arrange the cables and fix the Back Cover.



6. Sensor Configuration

6.1. Introduction

- This document is the instruction manual for the sensor configuration of 117"/84" e-Board

**warning**

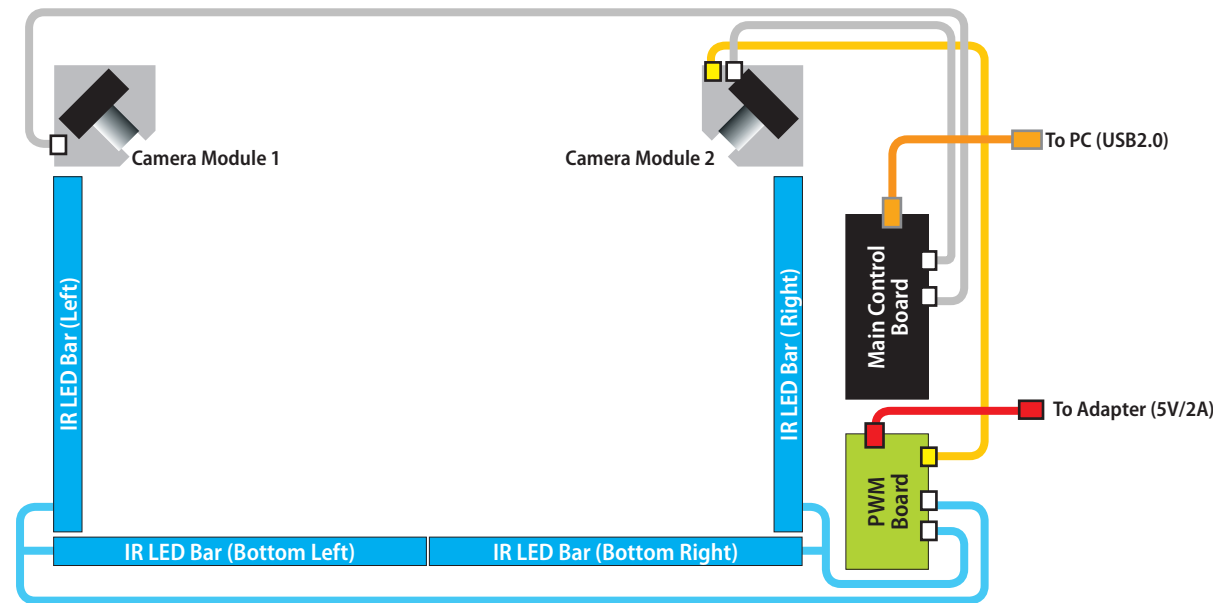
This is the configuration program that deeply affects the Sensor performance, it is not recommended to use for general users.

■ **System Requirement for Using T3kCfgFE.**

- Program : T3kCfgFE.exe
- Operating System: Microsoft Windows XP, Vista(32/64bit), 7(32/64bit)
- Minimum Requirement: Intel Celeron 333MHz , Resolution 1024x768

■ **Contents of the T3k Touch Sensor**

- Two Camera Modules
- Single Main Module
- IR Frame to make the bezel
- PWM Board
- Several Cables



< Touch sensor Diagram >

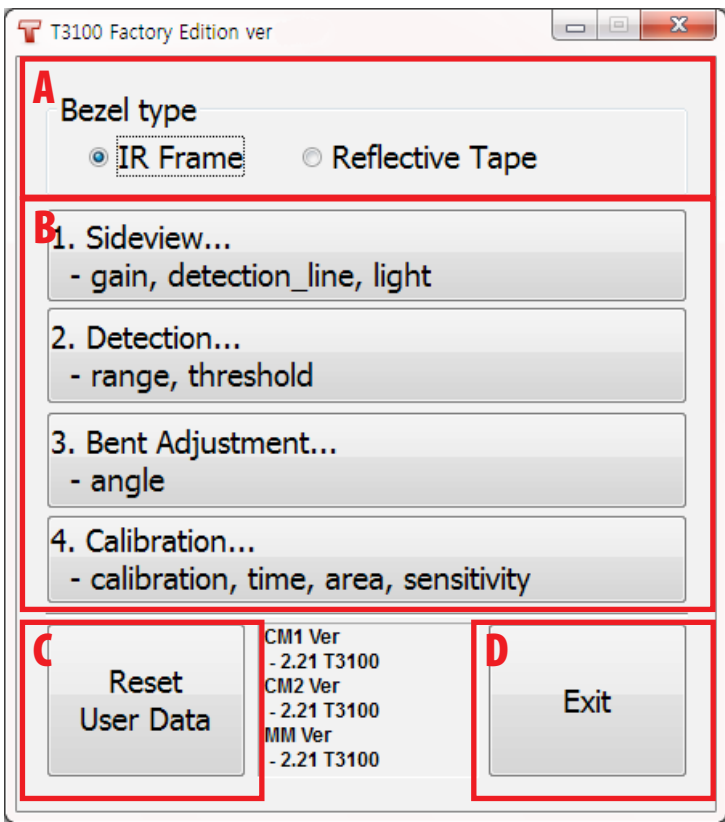
- The setup of the T3k Touch Sensor can be accomplished after the installation is complete and should follow the following process: "Sideview", "Detection", "Bent Adjustment", "Calibration."



[Figure. Sensor Setup Process]

6.1.1. Program Features

- The program has an interface that is divided into four sections, Bezel Type, Sensor Diagnostics, User Data Reset, and Firmware. Here is the T3kCfgFE interface.



[Figure. T3kCfgFE Program Window]

A. Bezel Type

- The top section is for selecting the installed bezel type. One should be provided with IR bars, so choose IR Frame.

B. Sensor Diagnostics

- The middle section is for Sensor Diagnostics comprised of four distinct settings. Please set each in the order provided.

C. Reset User Data

- On the bottom left is where one can reset the user data to the original manufacturing data.

D. Firmware Information

- On the bottom center, the version information of the firmware and the model name of each camera and main module is present.

6.2. Sideview

- The Sideview section provides the setting ways to set the placement of the Light Bar, adjust the light intensity, and align the tilt of the camera. This, in effect, is to regulate the light coming in to the camera sensors from the Light Bars.

■ Light Bar:

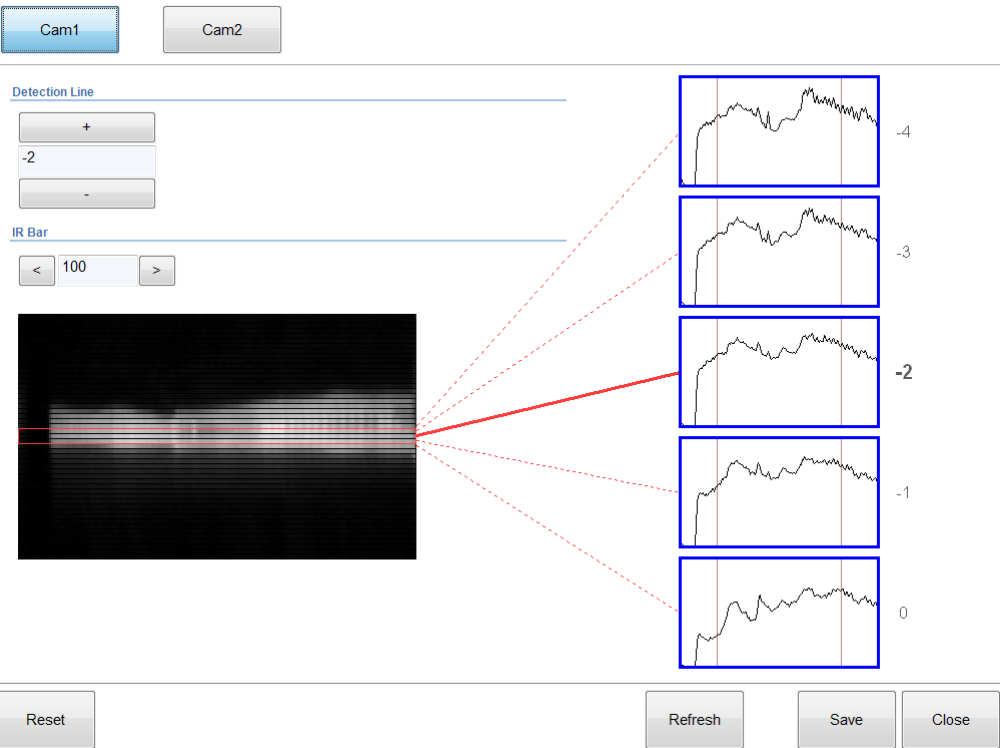
- White stripes on the screen are the IR rays that are photographed by the camera.

■ Sideview:

- The Sideview mode is a special mode of the Touch Sensor. When the Touch Sensor is set to the Sideview mode, the camera module is not in touch mode but rather in a real-time capture mode.

**Caution**

Touch function is not working in the Sideview mode.
Besides T3k touch sensor, an additional pointing device (i.e, a mouse)is needed for Sideview configuration.



[Figure. Sideview Setup Window]

6.2.1. Selection of Camera

- The T3k Touch Sensor is composed of two camera modules. Thus one needs to adjust the Sideview of two different cameras.



[Figure. Camera Selection Buttons]

- Select the cameras by clicking on Cam1 or Cam2 buttons on the top left corner of the Sideview menu. One will be shown two different views, one with what Camera 1 sees and another with what Camera 2 sees. One needs to adjust the settings for both.

6.2.2. Adjusting the Light Intensity

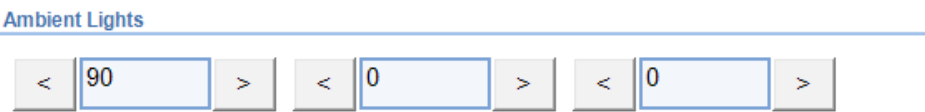
A. IR Frame Type



[Figure. IR Frame Type]

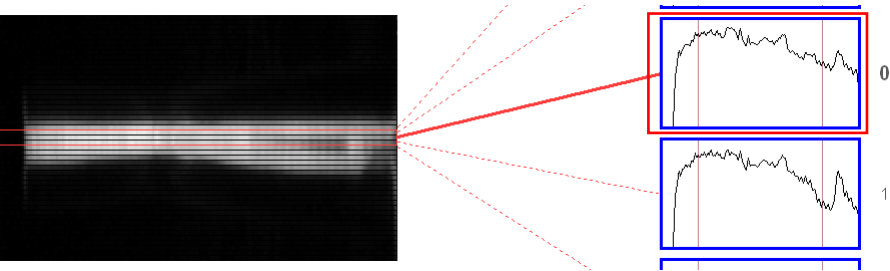
- The value is from 0 to 100. As this value decreases, the intensity of the light will increase.

B. Reflective Type



[Figure. Reflective Type]

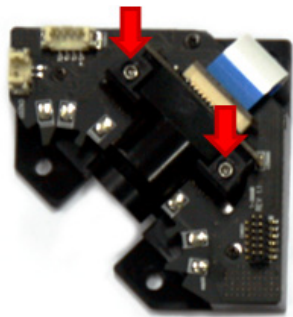
- It adjusts the intensity of IR LED light in the camera module. Adjust the LEDs in the left, right and center, respectively, in the camera module. It is getting brighter as the number goes up.
- Light intensity can be adjusted according to the graphs in the right.
- The thick line indicates the graph for configuration. Adjust the intensity values between 60~95%.



[Figure. The Light Intensity and the Corresponding Sideview]

6.2.3. Aligning the Camera Tilt

- Take a look at the glowing Sideview image and verify that it is in a horizontal position. If one has a slope, or if the image is bent upwards or downwards, one would have to align it. To align the tilt, one needs to place the provided Allen screws (hex keys) into each bolt and adjust.



[Figure. T3000 Bolt Location]

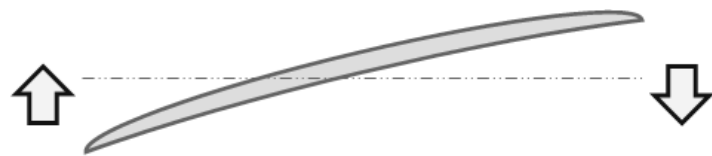


[Figure. T3100 Bolt Location]

- The IR Bar goes up and down as one turns the bolt clockwise and counter clockwise.
- Caveat: Do not over do it. There are several occasions where the bolts have been damaged beyond use due to turning the hex key beyond the force required.

■ Adjusting the Tilt According to the Position of the IR Bar

A. When there is an incline



- When a slope is present, one would need to place the hex keys and turn the bolt so that the IR Bar is level with the horizontal. The right side needs to come down and the left side needs to go up in the example above.

B. When it is bent upwards



- When the IR Bar is bent upwards, pull both sides downwards by turning the two bolts.

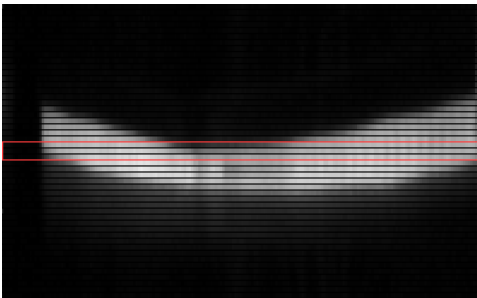
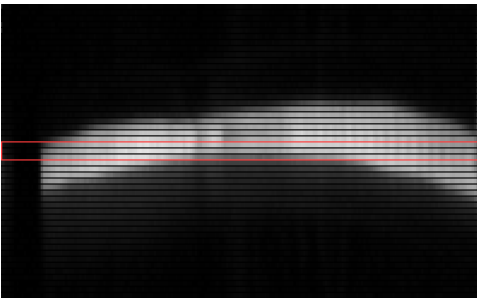
C. When it is bent downwards



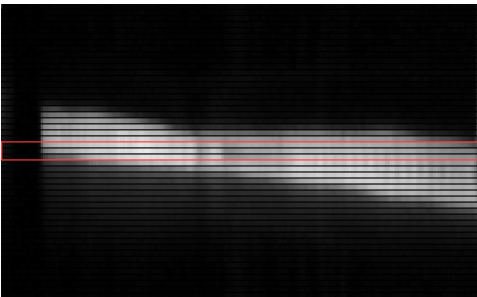
- When the IR Bar is bent downwards, pull both sides upwards by turning the two bolts .

- After the IR Bar is level to the horizontal, shift the placement of the IR Bar so that it is inside the two red lines. (Refer to "6.2.4. Positioning the White Bar")

■ Faulty Adjustment of the Tilt

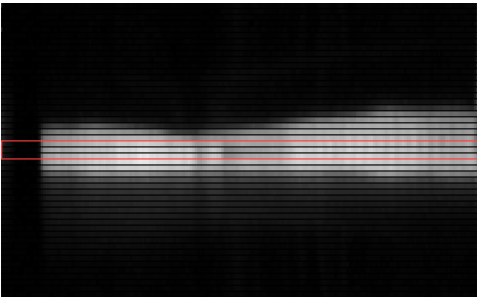


- The IR Bar is bent like a bow.

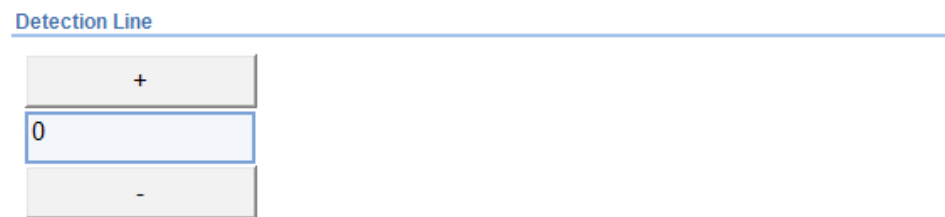


- The IR Bar has a slope.

■ Correct Adjustment of the Tilt

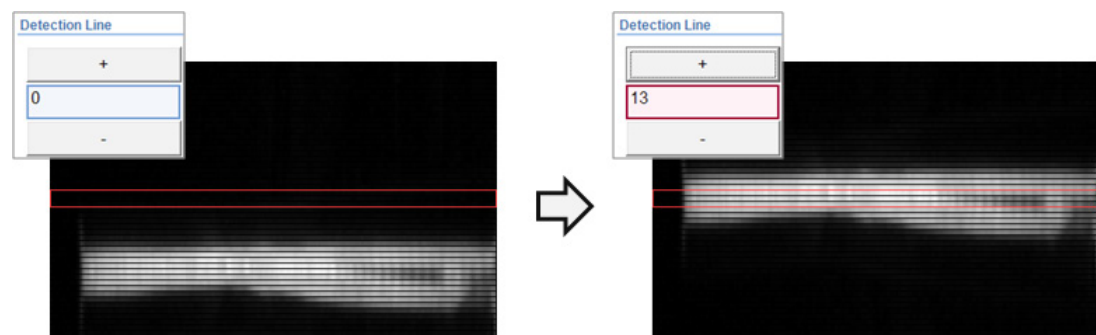


6.2.4. Positioning the White Bar



[Figure. Positioning the White Bar]

- Shift the placement of the white skeletal image by increasing or decreasing the value above to move it inside the two red lines.



[Figure. Example in Positioning the White Bar]

6.2.5. Saving the Sideview Data



[Figure. Saving the Data]

- Press on the Save button on the bottom of the Sideview screen to save the data onto the Main Module as the data are not automatically saved.

6.3. Detection

- The second item on the Sensor Diagnostics section is the Detection adjustment. This is where one sets the detection range, and the threshold of the cameras.

6.3.1. Threshold

- The Threshold is to set the recognition capabilities of an object by the camera. As this value goes up, the probability of noise becoming a factor in recognition increases. In general, the Threshold is set to 180 for the IR Frame.

 **INFO.**

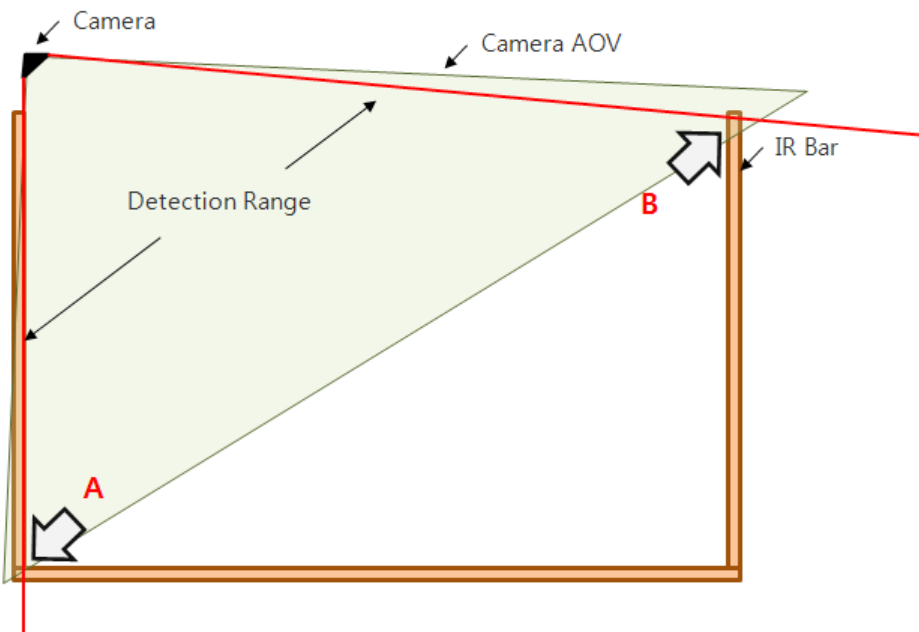
The Threshold value is typically set to 180.

6.3.2. Detection Range

- To set the Detection Range is to eliminate from the angle of view (AOV) of the camera those portions that are not needed for touch. The question comes up, which portions are not needed for touch? There are two answers to this questions. One, is to eliminate the portions of the graph that the camera does not see, which in turn is to say to mark off where the light is not present. Another answer is to eliminate those portions where the camera sees reflections. These two answers will be made clearer in the examples following.

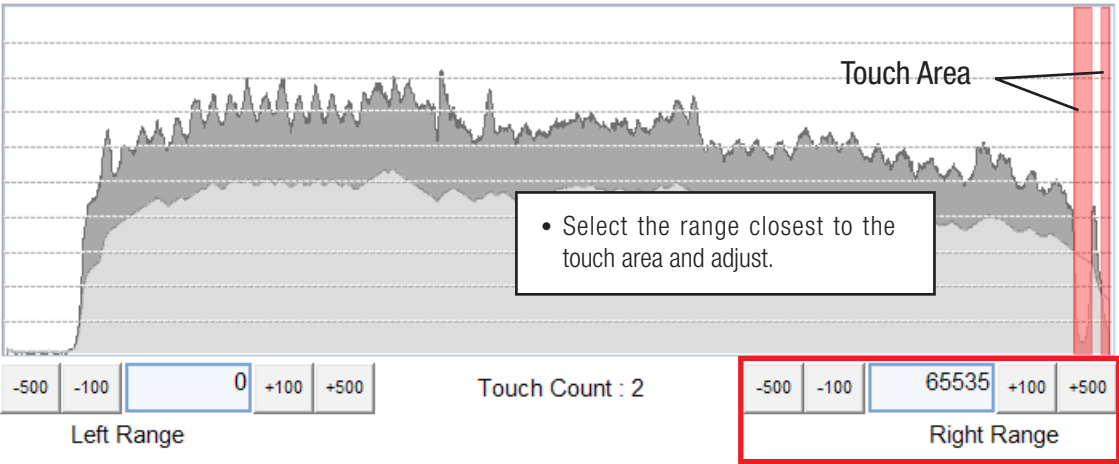
1) Manual Setting

- To set the Detection Range, one needs to go and touch the corners of the detection range for each camera module.
- For example, suppose that the camera sensor on the top left corner is Sensor 1 and let us say that the angle of view (AOV) is from the leftmost IR Bar to the Camera AOV in the figure below. The Detection Range of the camera is a smaller angle to the top red line. Thus, there are two points A, and B that the manufacturer needs to reference.



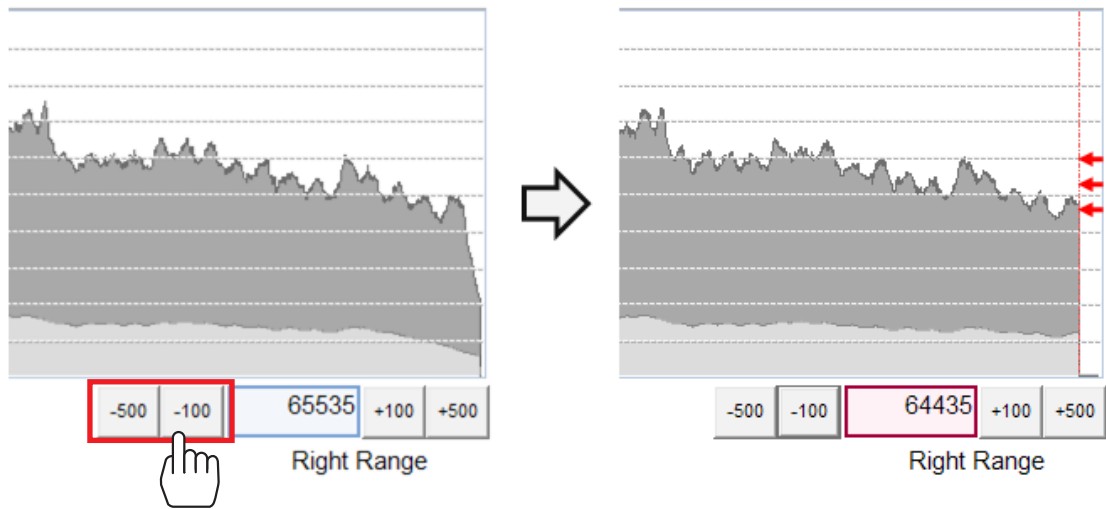
[Figure. Area of View & Detection Range when the Sensor is Positioned on the Top Left Corner]

- When the manufacturer touches the lower left corner (point A), it shows up on the Sensor 1 graph as red areas. One would need to change the range so that only one area is viewable.



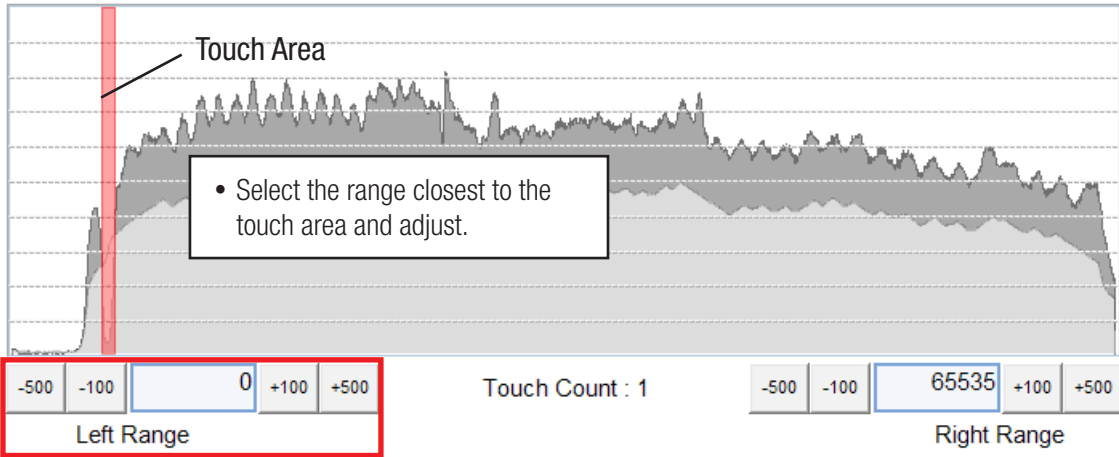
[Figure. Touch Area from the Detection Graph]

- There may be more than one touch area, the area closer to the edge being a reflection. Select the touch area closer to the middle of the screen and eliminate the other. One eliminates the touch area by clicking on the range closest to the touch area, the Right Range in this case. There are “-500,” “-100,” “+100,” “+500” buttons. Click to eliminate those touch areas closer to the edges.



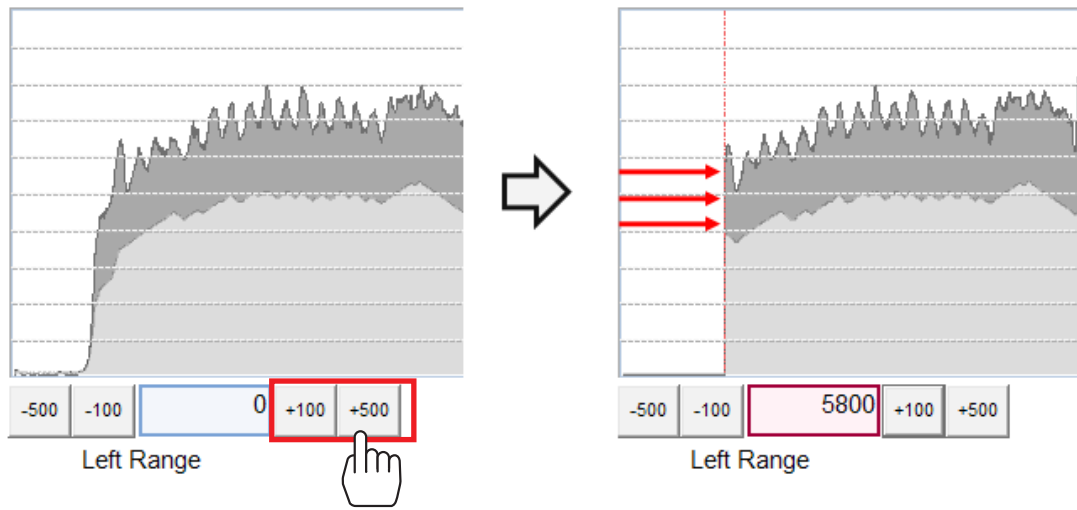
[Figure. Limiting the Detection Area]

- One is eliminating other red areas but also those parts that do not have light. In the upper left example, one has a steep drop off in the signal that the camera sees. Limit the Right Range so that the dotted red line eliminated the steep drop off.
- Next, one needs to touch the upper right hand corner (point B). As before, the touch area appears on the left side of the Sensor 1 graph of the Detection screen. Narrow down the range so that there is only a single bar to the left of the area.



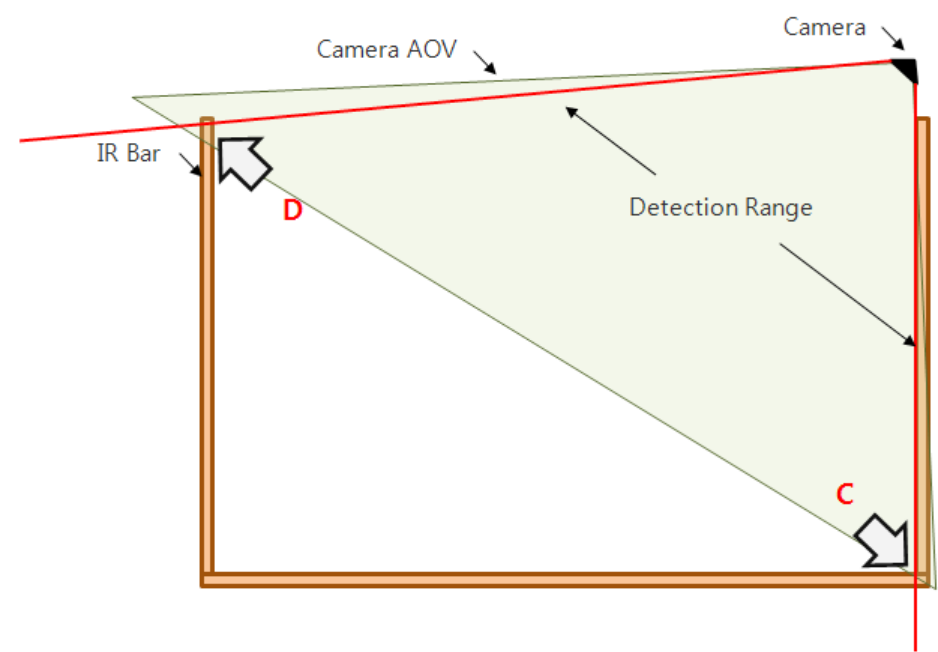
[Figure. Touch Area from the Detection Graph]

- As shown above in Figure 3-4, one needs to narrow down the range so that one does not see the steep drop off to the left of the graph but also not eliminate the red touch area.



[Figure. Adjusting the Detection Area]

- Select the detection range for Sensor 2 as was done for Sensor 1. Sensor 2 is situated to the right of the screen so the detection area is as follows.

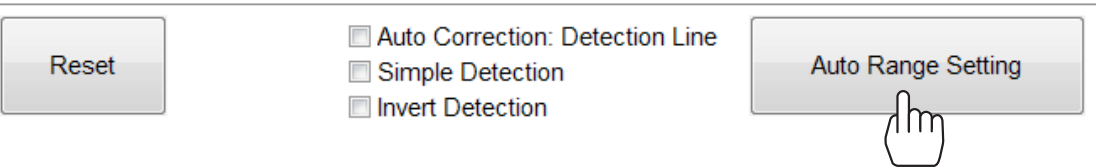


[Figure. Area of View & Detection Range when the Sensor is Positioned on the Top Right Corner]

- Do the same for points C and D to adjust the detection area.

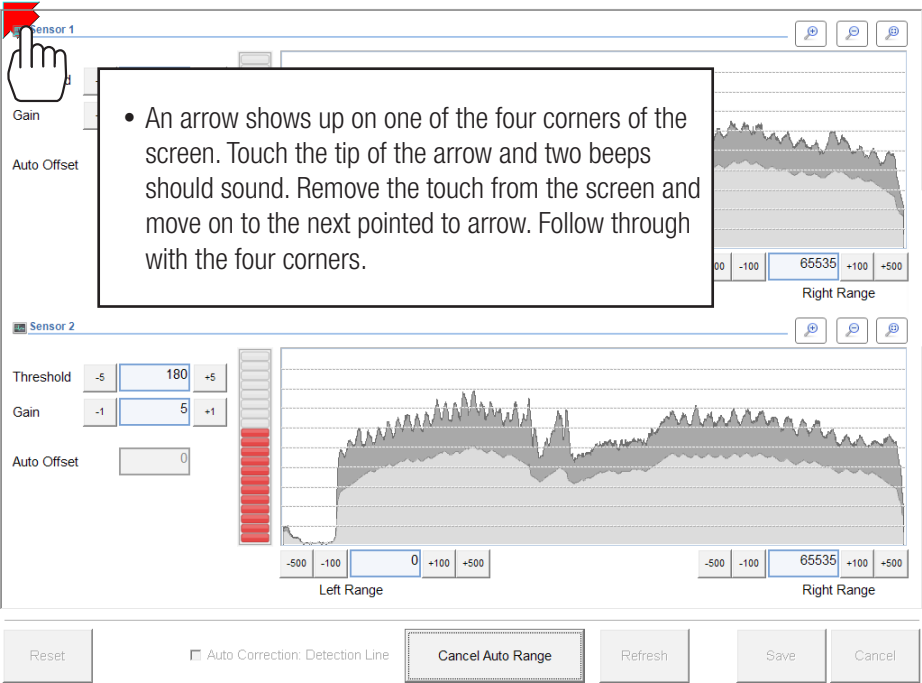
2) Automatic Setting

- As a new feature starting from version 2.2 of the firmware, an Auto Range Setting button on the bottom sets the Detection Range with the press of four points.



[Figure. Auto Range Setting Button]

- Press on the Auto Range Setting button and one will be presented with an arrow indicating where to place one's finger. There are four arrows, A, B, C, and D, in all.



[Figure. Auto Range Setting Example]

- If the manufacturer followed thru with the four corners and heard the beeps, the detection will be determined and one should have an image resembling the following figure. Notice that the middle red bar has turned green in the process.



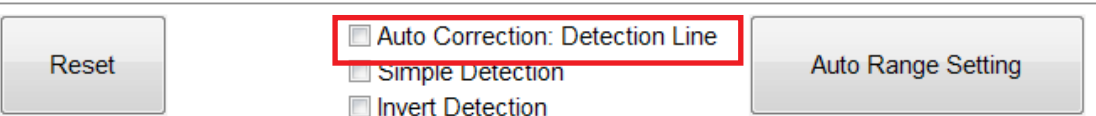
[Figure. Auto Range Setting Complete]

6.3.3. Gain

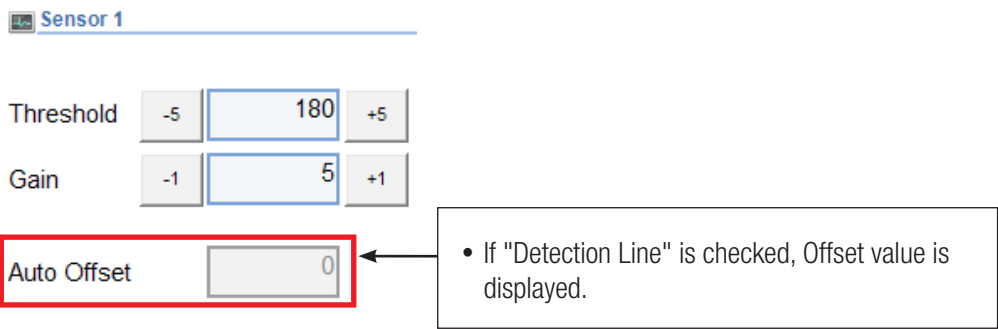
- A placeholder for a feature that will be available later on.

6.3.4. Auto Correction: Detection Line

- The sensor detects the position change of the light bar and automatically corrects the distorted calibration, when the position of the light bar is changed for any reason. It is not recommended to use.
- The corrected value for new position is indicated at Auto Offset.



[Figure. Auto Correction: Detection Line]

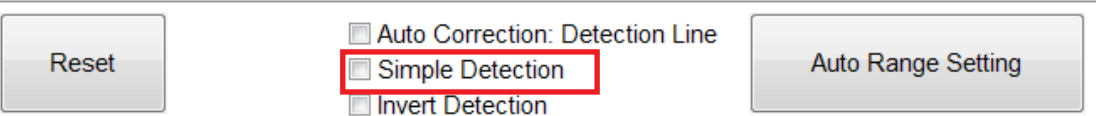


[Figure. Auto Offset]

6.3.5. Simple Detection

- This function is for highly sensitive touch.
- It aims for the speedy touch games such as throwing an object toward the touch screen.

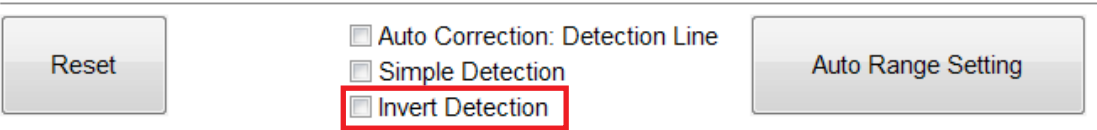
Warning
Since this mode is not suitable for normal use of touch screens or interactive boards, it is not recommended to use for regular purpose.



[Figure. Simple Detection]

6.3.6. Invert Detection

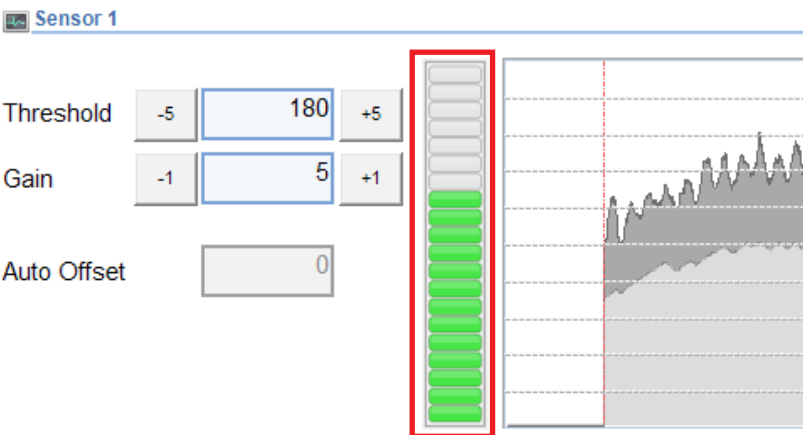
- Select when using IR Pen without IR LED Bar.



[Figure. Invert Detection]

6.3.7. Detection Sensitivity Measurement Graph

- The light intensity at a certain point in the graph as well as the light intensity of the average IR Bar are two factors that go into the Detection Sensitivity Measurement Graph. If either the light intensity at a certain point is low or the average IR Bar is too dim, the resulting sensitivity graph suffers.



[Figure. Detection Sensitivity Measurement Graph]

- The light intensity at a certain point is shown in colors and the average intensity is shown as levels.

Color of Graph	Sensitivity
	Very Good
	Good
	Bad
	Very Bad

[Table. Change in Color due to Sensitivity]

6.3.8. Saving the Detection Data



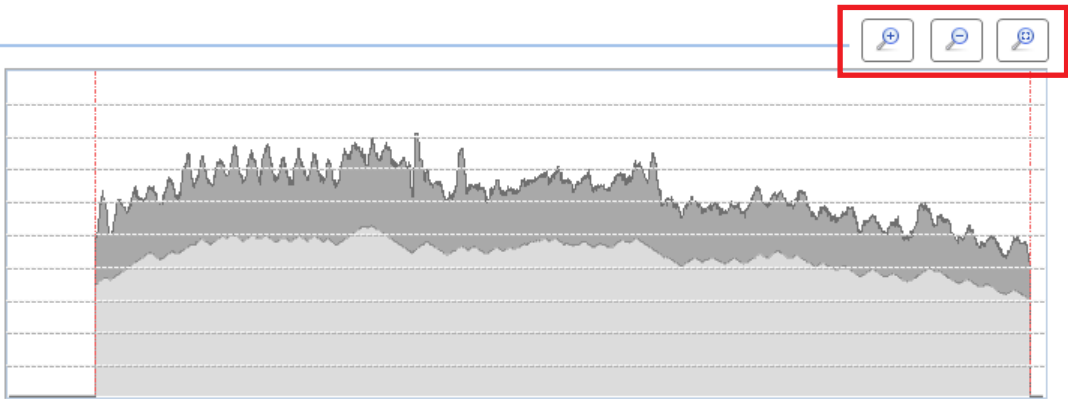
[Figure. Saving Data]

- Pressing on the Save button stores the data unto the Main Module as the data is not automatically saved.

6.3.9. Additional Features

1) Zoom Function

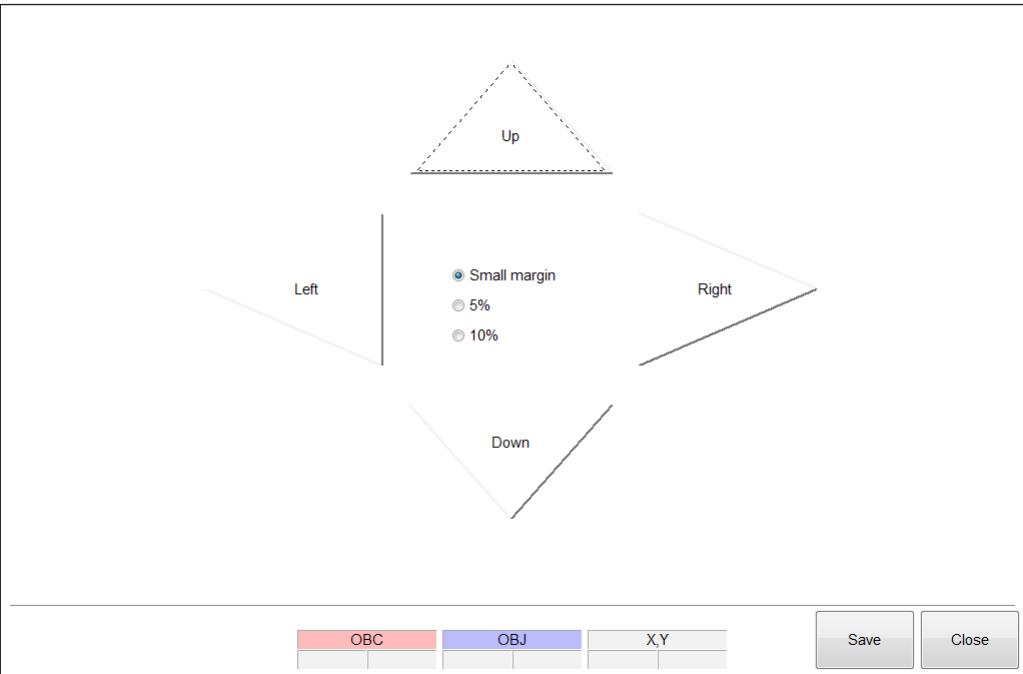
- There exists a zoom function on each detection graph for an up-close view of the images. This is useful when there are parts of the screen that does not seems to recognize the touch.
- : Zoom In : Zoom Out : 100%



[Figure. Zoom In / Zoom Out Button]

6.4. Bent Adjustment

- Bent Adjustment is for the adjustment of the angle distortions inherent in cameras as well as the positioning of the cameras.



[Figure. Bent Adjustment Window]

6.4.1. Bent Adjustment Process

1) Choose the screen spacing of the Bent Adjustment screen.

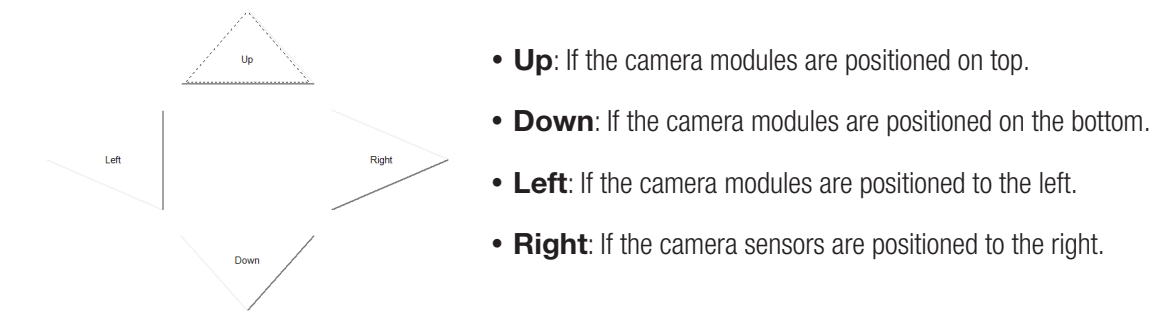
- ☒ Small margin

☐ 5%

☐ 10%

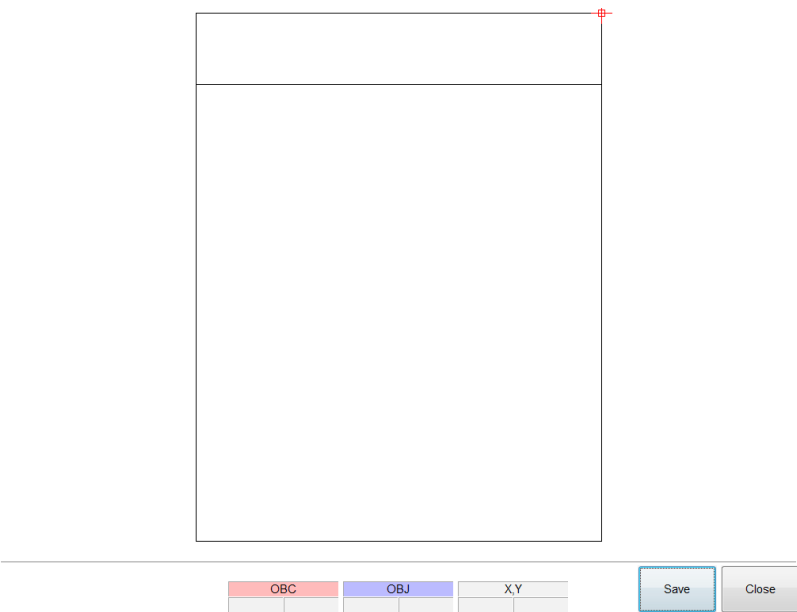
- There exists a 128 pixel distance from the edge of the screen to the first pointer for Bent Adjustment. Small Margin tells one that there is simply 128 pixels available. 5% says, in addition to the 128 pixels, there is an additional 5% of the screen added. 10% says that in addition to the 128 pixels available, there is a 10% of the screen added.

2) Select the Positioning of the cameras on the Bent Adjustment window.



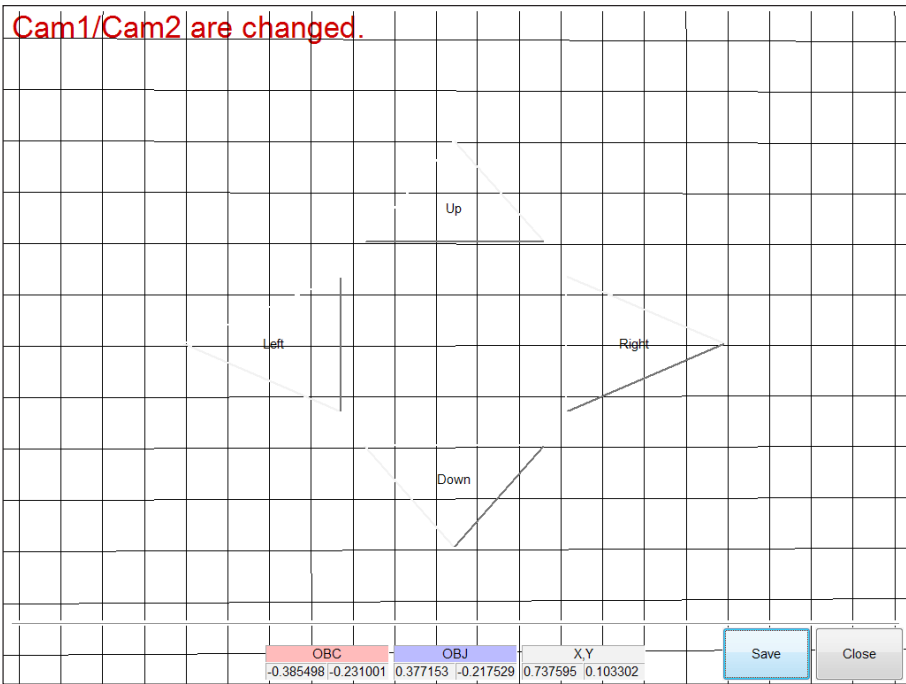
[Figure. Buttons for Camera Sensor Orientation]

- Do this only for one of the four. No need to do it for the Up, Down, Left, and Right.
- 3) Touch the blinking cross perpendicular to the screen. Let go of the surface when one hears a beep. If the sensor recognizes the touch point correctly, it beeps twice when one takes the finger off the surface and the cross moves to the next position. There are a total of six positions that the manufacturer needs to touch.



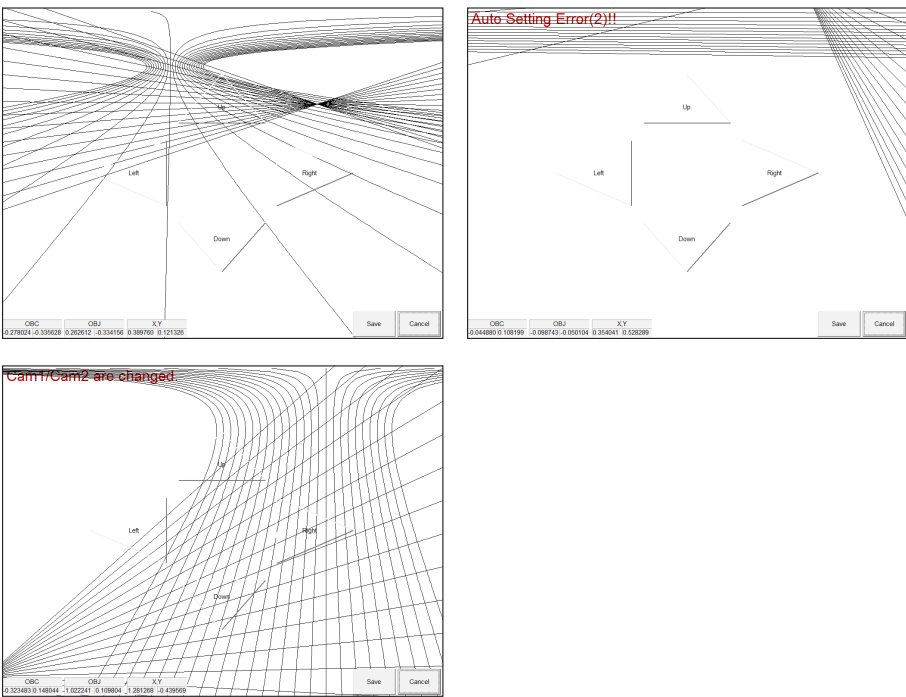
[Figure. Adjustment Window when the Camera Sensors are Positioned on Top]

4) If the bent adjustment is done correctly, the following window appears. The image is that of a well placed grid.



[Figure. Correctly Aligned Bent Adjustment]

- If any of the following images appear, there was a misalignment. One would need to redo the alignment.



[Figure. Incorrectly Aligned Bent Adjustment]

6.4.2. Saving the Bent Adjustment Data

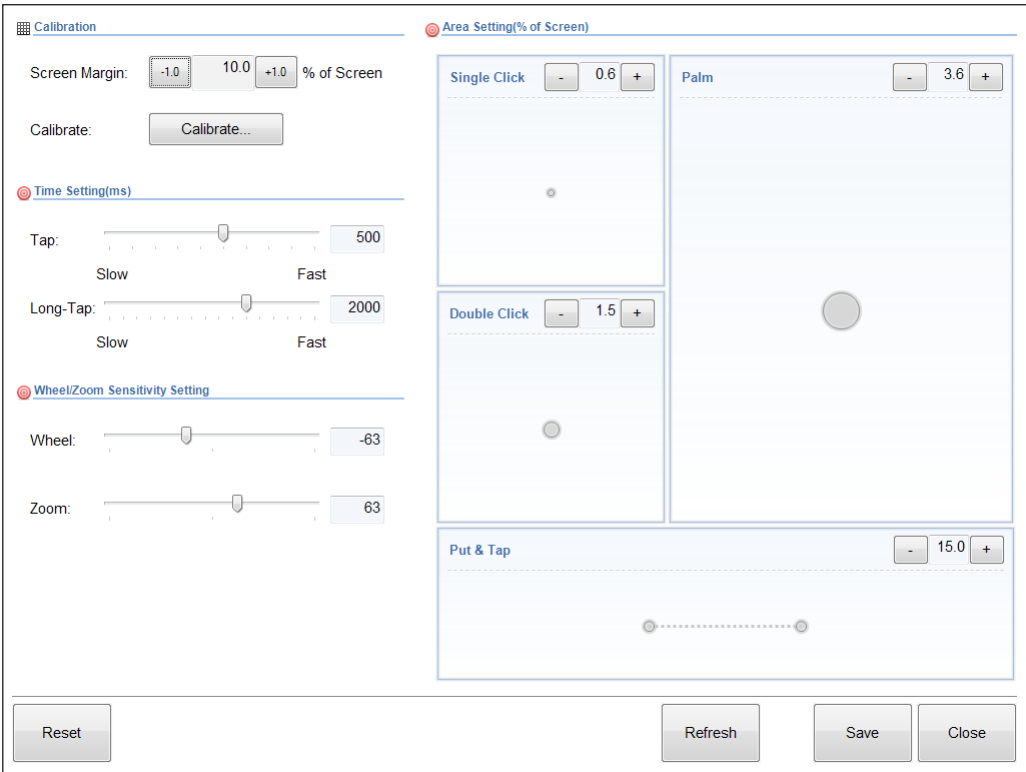


[Figure. Save the Data]

- Press on the Save button to store the data onto the Main Module as the data is not automatically saved.

6.5. Calibration

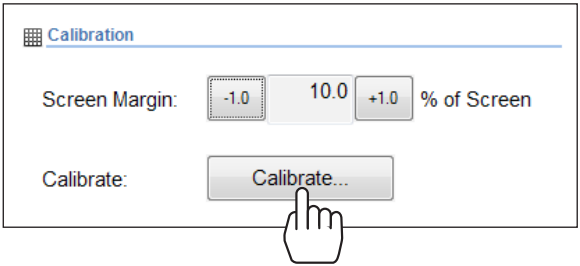
- The Calibration setting is for the set up of the touch coordinate calibration, tap timing, wheel sensitivity, and touch area settings.



[Figure. Calibration Window]

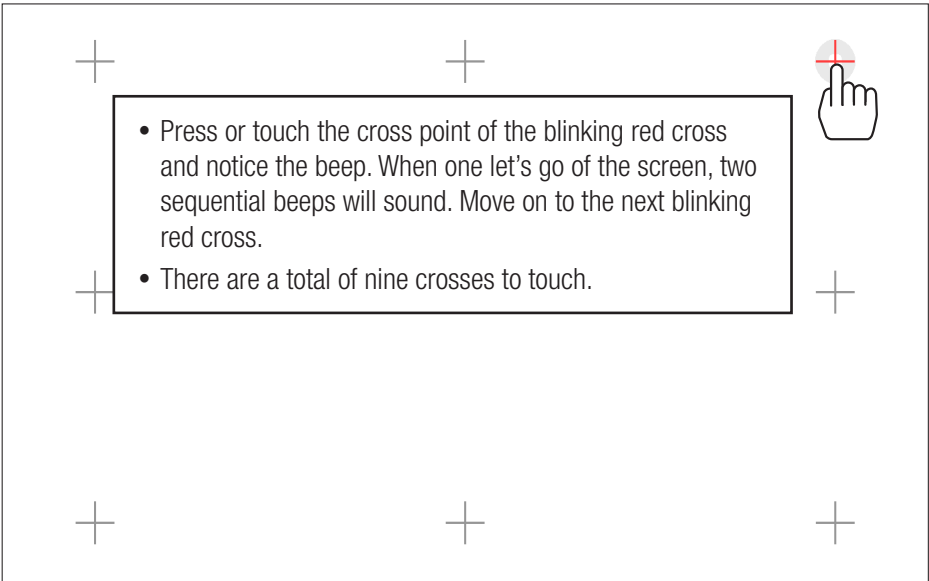
6.5.1. Touch Coordinate Calibration

- As one begins touching the surface equipped with our camera sensors, one will begin to see a gap between the touch and the mouse. The purpose of touch coordinate calibration is to minimize this gap. Press on the button labeled Calibrate.



[Figure. Calibrate Button]

- When the Calibrate button is depressed, the following image comes up on screen. On the upper right hand corner, a red cross blinks. Place a pointer perpendicular to the surface of the screen. A beep will sound when one places a pointer and two beeps will sound as one removes it from the blinking red cross. Go no to the next blinking red cross. There will be nine points that the red cross will cover. Touch and let go of the surface nine different times and one should have the touch coincide with the mouse.

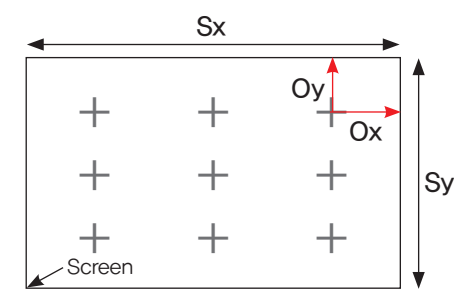


[Figure. Touch Coordinate Calibration Window]

- The camera sensor recognizes the last position of the touch, so one can move the pointer. Just do not remove the pointer from the surface since then the double beep will have sounded. One can always exit out of the Calibration screen by pressing the Escape key.

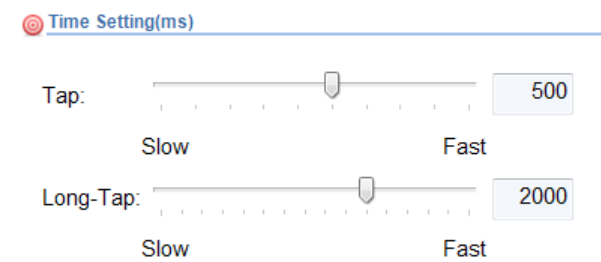
■ **Screen Margin:**

- The Screen Margin is to position the cross on the calibration screen. It is a percentage of the margin divided by the height or the width of the screen. The default is 10%.



- Screen Margin = $Ox / Sx * 100$

6.5.2. Tap Timing

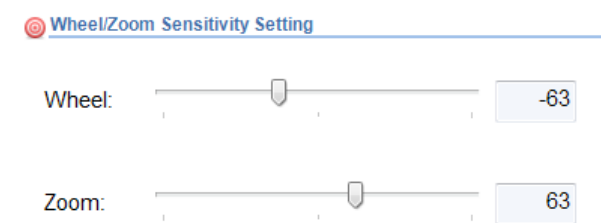


[Figure. Tap Timing Settings]

- This is the recognition timing for the Tap and the Long Tap. As the slider bar is nearer the fast indicator, the quicker it will recognize a touch as a tap or a lengthy tap. The values to the right are in milliseconds. Advice is to use the default values.

INFO. The default value is recommended.

6.5.3. Sensitivity of the Mouse Wheel / Zoom



[Figure. Wheel & Zoom Sensitivity]

■ **Wheel:**

- This controls the sensitivity of the mouse wheel.
- The middle marker indicates the starting point of zero. The closer one is to zero, the less sensitive it is to the touch. The farther one is from the center, the more sensitive it is to the touch. If the value is a positive number, the roll of the wheel in one direction will move the page one way. If the value is negative, the roll will move the page in another way.

■ **Zoom:**

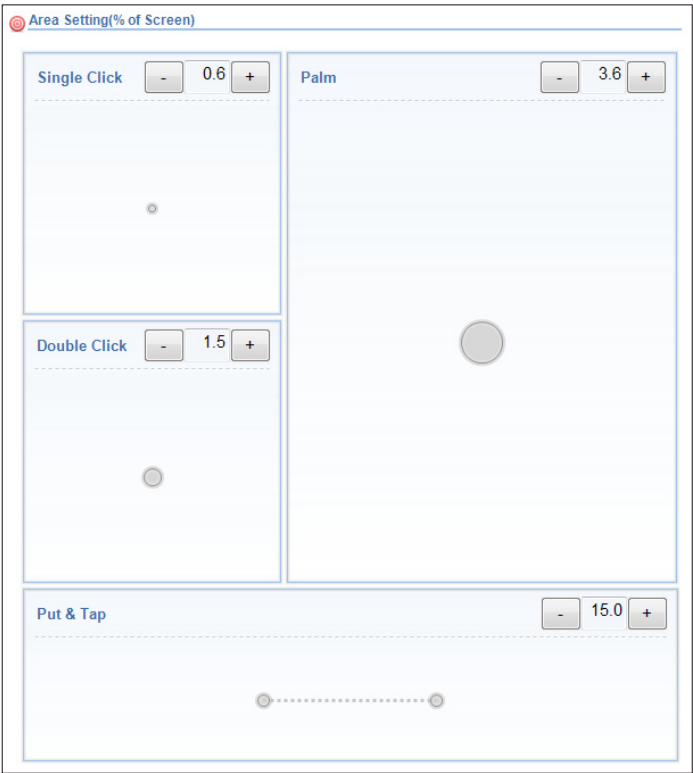
- Regulates the sensitivity of the magnification or shrinkage function. This only works if one has set the zoom-in / zoom-out function as Ctrl+Wheel or Wheel. Works the same way as the Wheel function above. Advice is to use the default values.

INFO. The default value is recommended.

6.5.4. Touch Area

- Area Settings is to set the area of the touched surface. The settings of the touch area can affect the touch sensitivity of the touch surface.

Caution This value affects touch performance. so the default value is recommended.

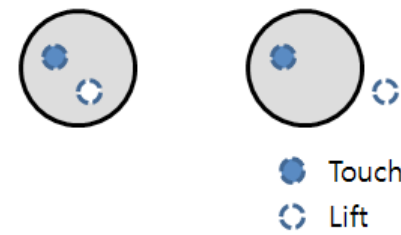


[Figure. Touch Area Settings]

■ Click Area:

- This is the area where the user Touches and Lifts.
- If the area where the user Touches and Lifts is not within the bounds set, touch is not recognized.

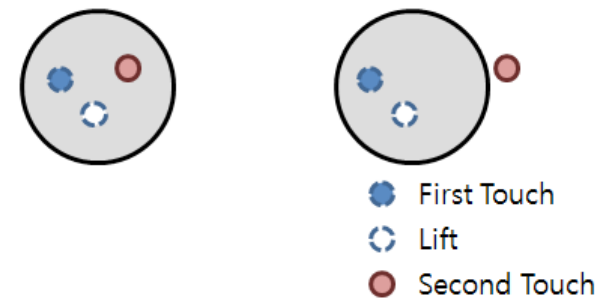
A. Valid Click B. Invalid Click



■ Double Click Area:

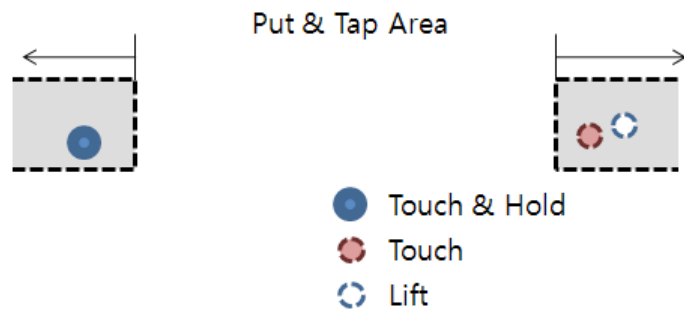
- This is the area where the user Touches, Lifts, and Touches again.
- If the area where the user Touches, Lifts, and Touches is not within the bounds set, the double click is not recognized.

A. Valid Double Click B. Invalid Double Click



■ Put & Tap Area

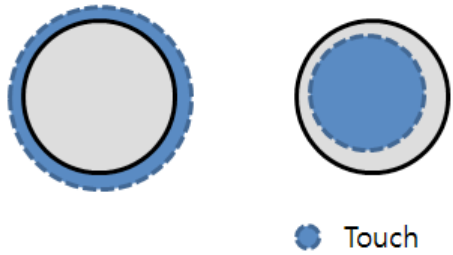
- This is the minimum area within which the Put & Tap action is performed.
- If the area is less than the limits of this area, Put & Tap will not be recognized.



■ Palm Area

- This is the area that the palm is recognized. If the surface is any smaller than this, it recognizes it as a finger or multiple fingers.

A. Palm Touch B. Single Finger Touch



6.5.5. Saving the Calibration Data



[Figure. Saving the Data]

- Press the Save button on the bottom right to store in onto the Main Module as the data is not automatically saved.

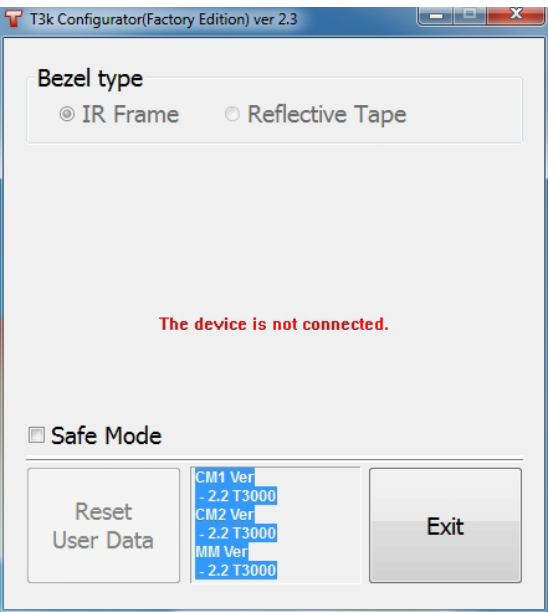
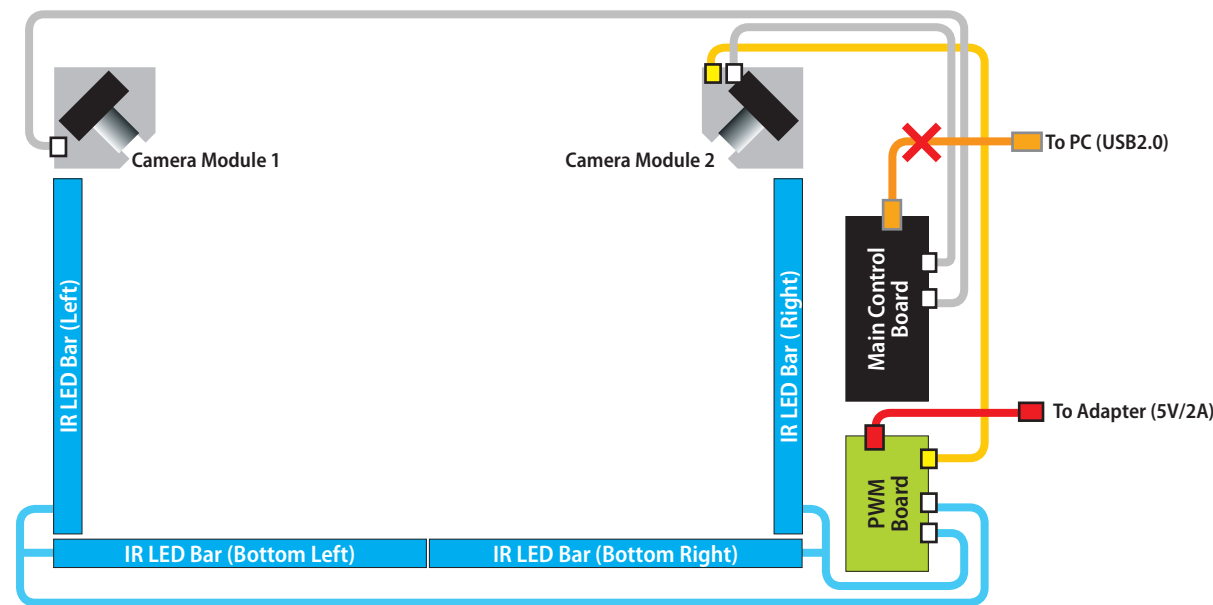
7. How to solve Touch Configuration Errors

7.1. Inaccurate Touch Point

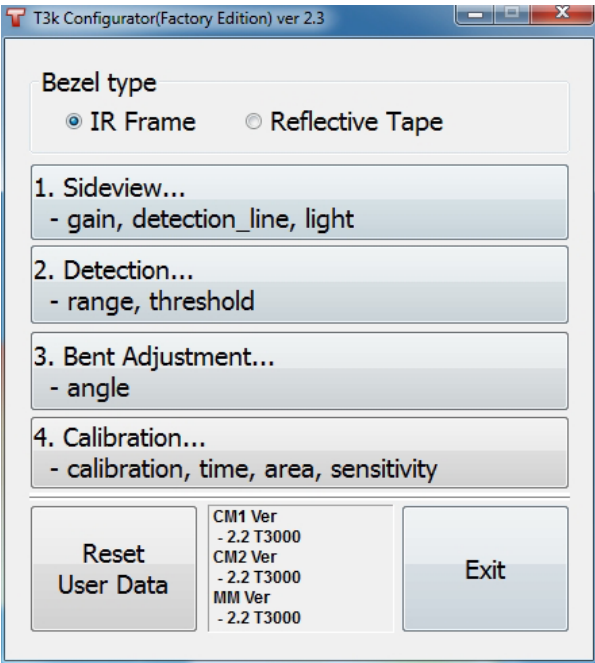
- Repeat the calibration procedures. (Refer to "6.5. Calibration")
- If the touch points are still inaccurate after repeating the calibration procedures, repeat the Sensor Configuration (Factory Edition) procedures. (Refer to "6. Sensor Configuration")

7.2. In case Touch Sensor does not work

- Check the shape of the Light Bar at the Sideview step of the Sensor Configuration program (Factory Edition). (Refer to "6.2. Sideview") (If the USB connection between the main control board and PC is disconnected, it is not able to enter Configuration step. If so, check the USB connection first.)

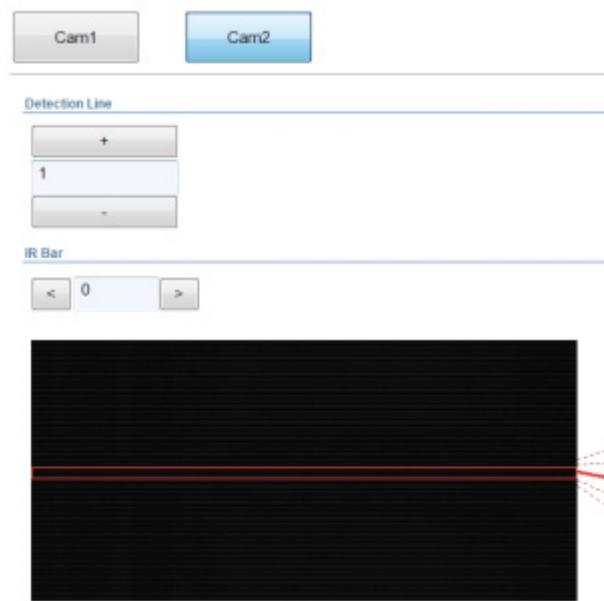


<USB disconnection between Main Control Board and PC>



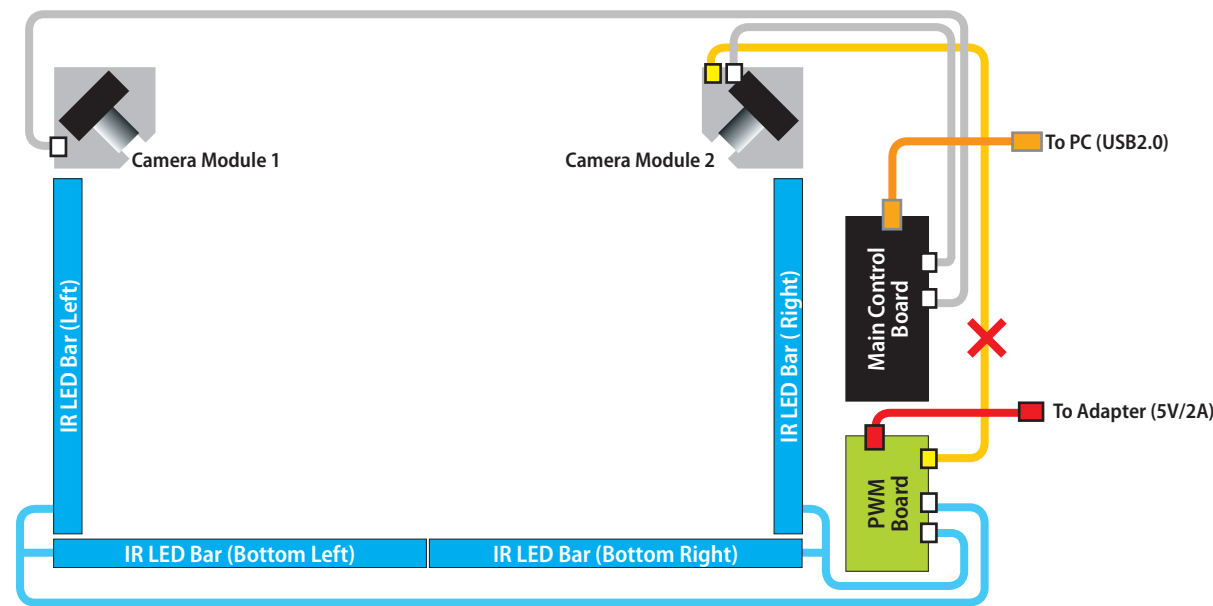
<Normal USB connection between Main Control Board and PC>

7.2.1. No Light Bar



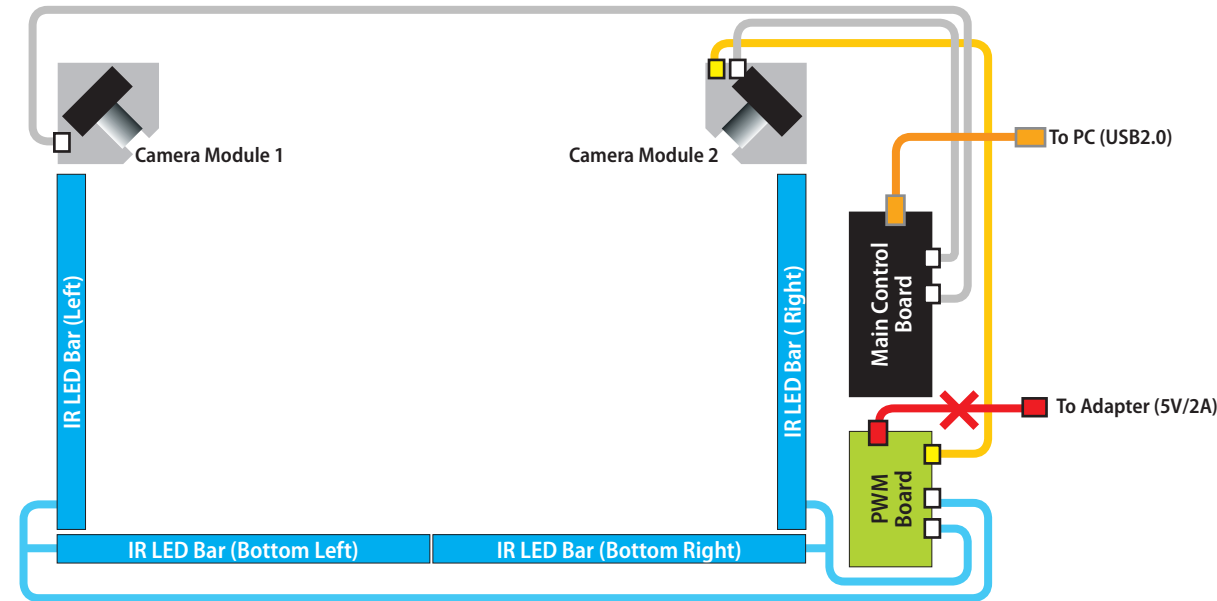
<No Light Bar is displayed at “Sideview” step>

- Check the PWM signal cables between PWM Board and Camera Sensor Module. Plug the connector of the Camera Sensor Module into the PWM Board again.



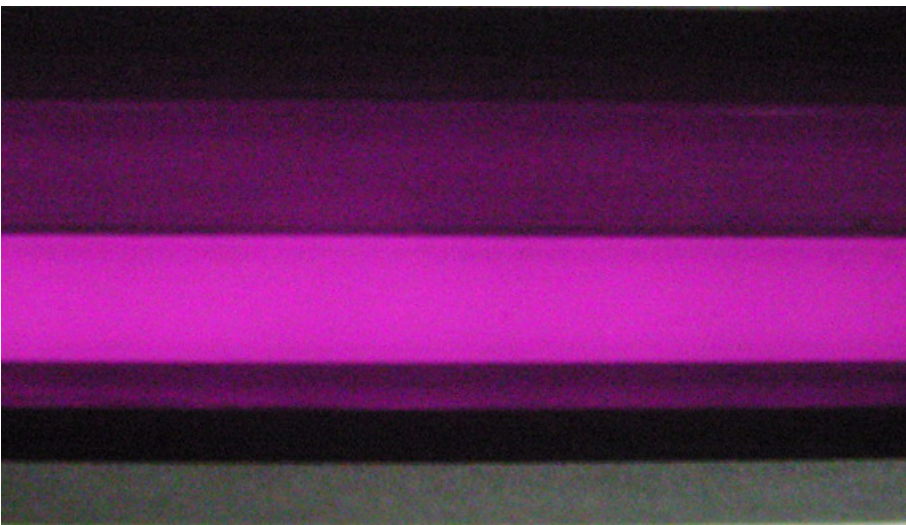
<Check point for No Light Bar>

- If the cable of the PWM signal is normal, check the Power Supply Adapter and its cable whether it supplies 5V output to the PWM board properly.



<Checkpoint for Power Supply Adapter cable>

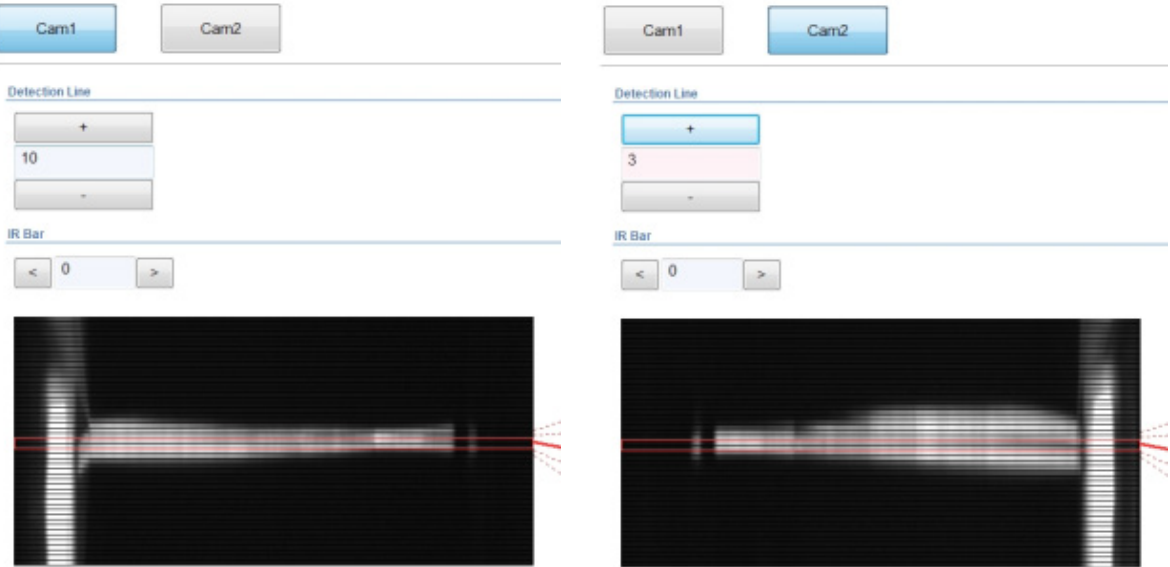
- If there is no problem for Power Supply Adapter, check the condition of PWM board which distributes the power from Power Supply Adapter to the IR LED bars. If it has any problem, replace the PWM board.
- In case the Light Bar is not displayed after replacing the PWM Board, check the condition of IR LED Bar. Replace the IR Bar if it does not emit IR ray properly.
- It can be easily checked by taking pictures with a common digital camera. IR LED Bar emits purple light in the picture.



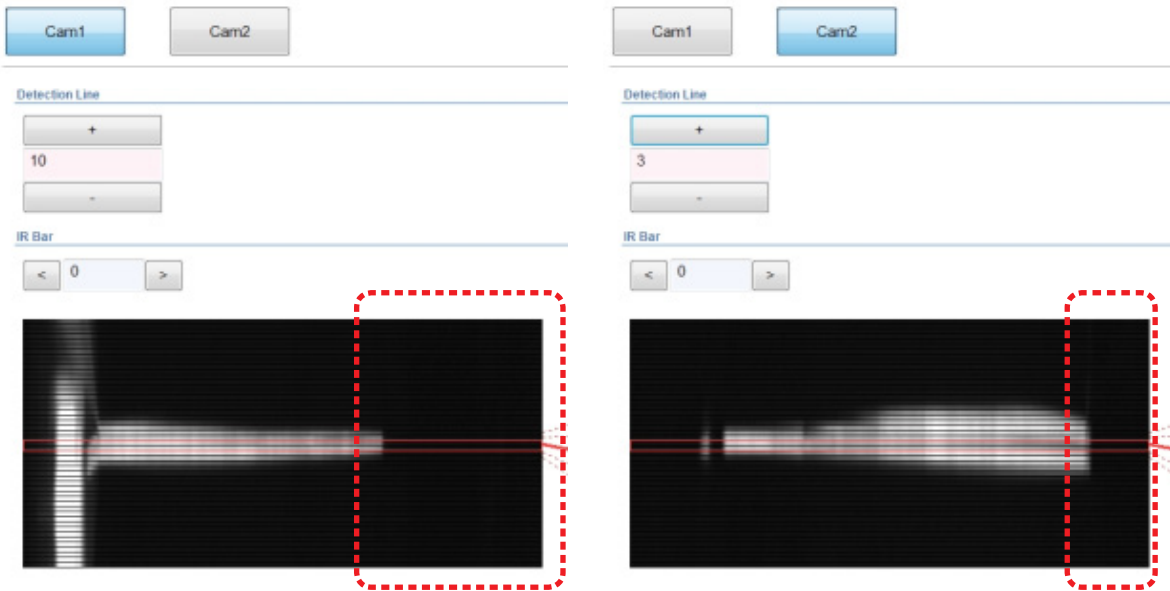
<Close-up Picture>

7.2.2. If Light Bar is not displayed completely.

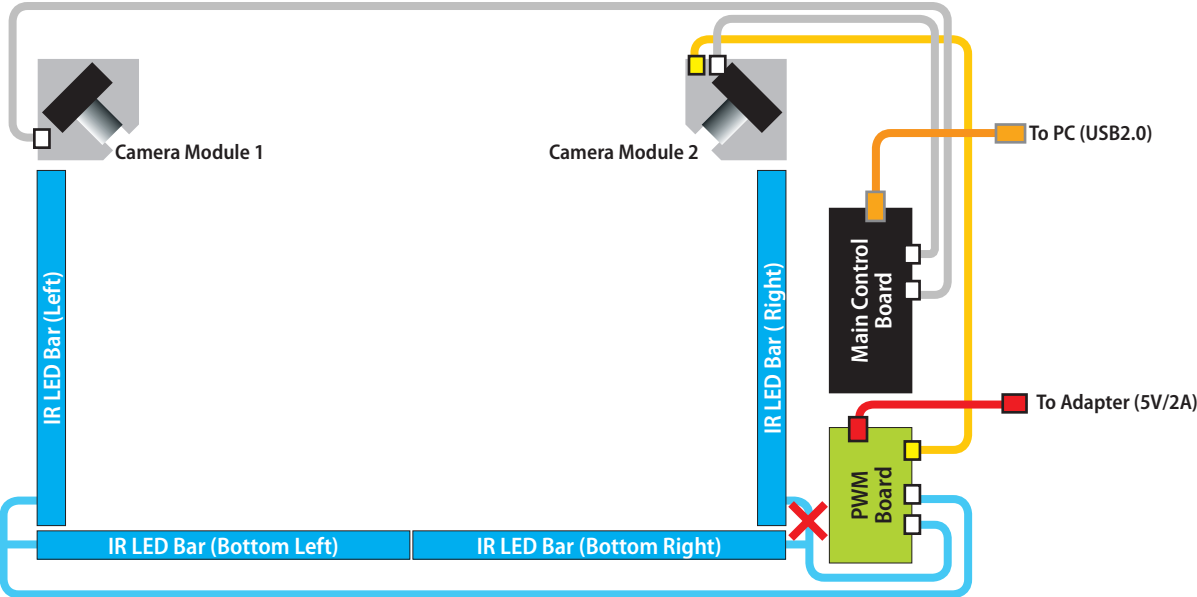
- In such case, Power Supply Adapter has no problem.
- Check the cable between the PWM Board and the IR LED Bar at the side of the incomplete Light Bar display.
- Check the power cable for IR LED Bar



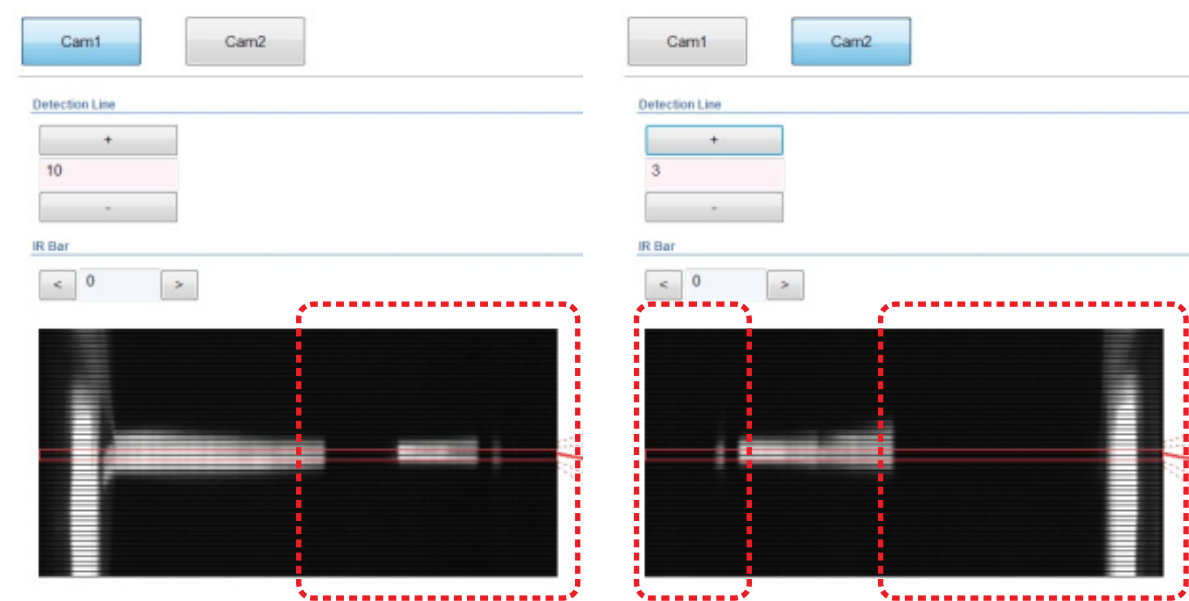
<Normal Shape of Light Bar>



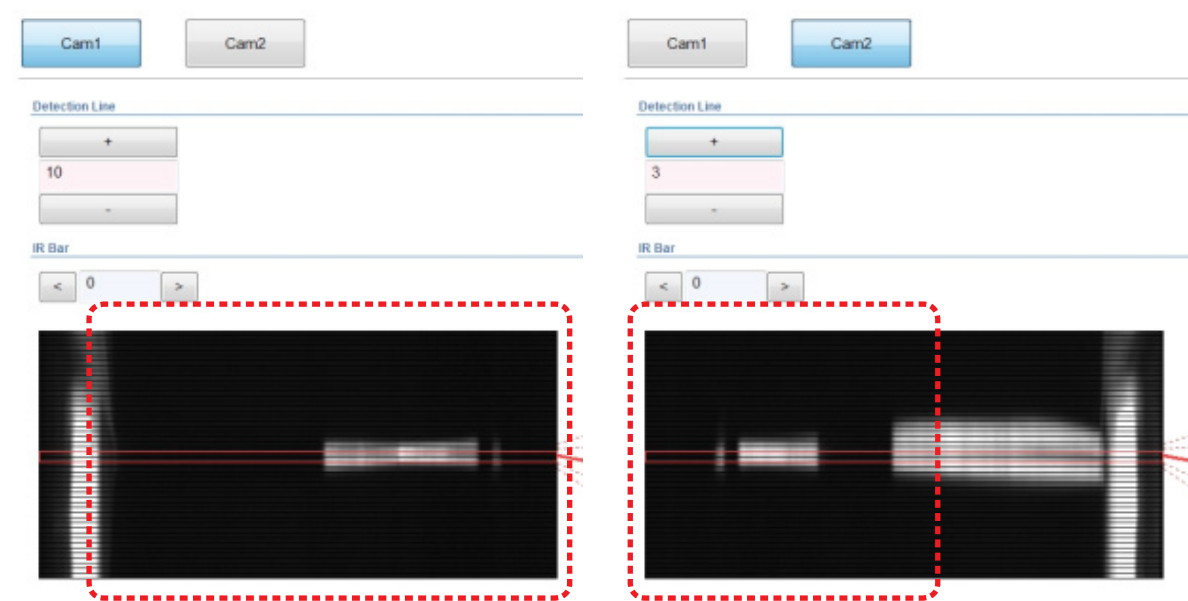
<Light Bar shape of abnormal IR Bar (Right)>



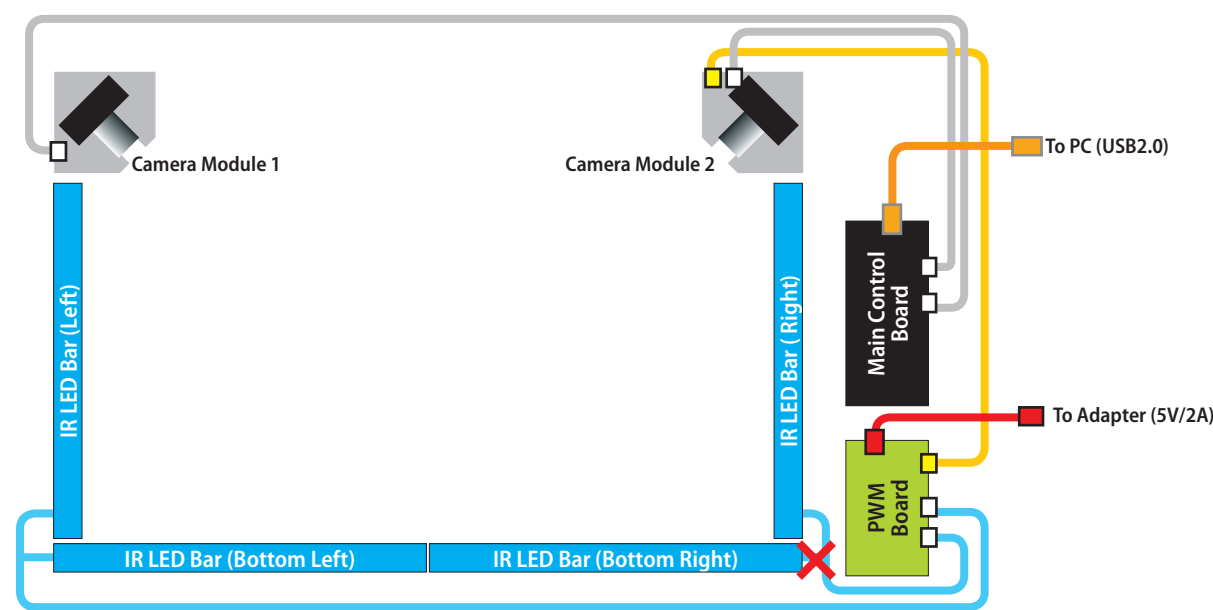
<Checkpoint for abnormal IR Bar (Right)>



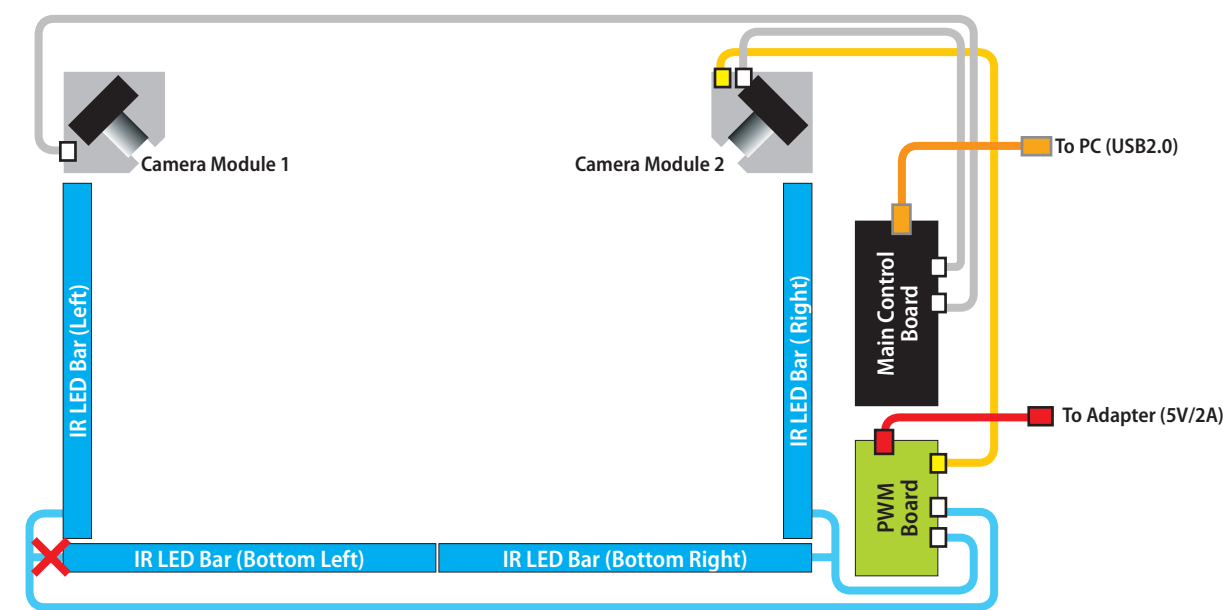
<Light Bar shape of abnormal IR Bar (Bottom Right)>



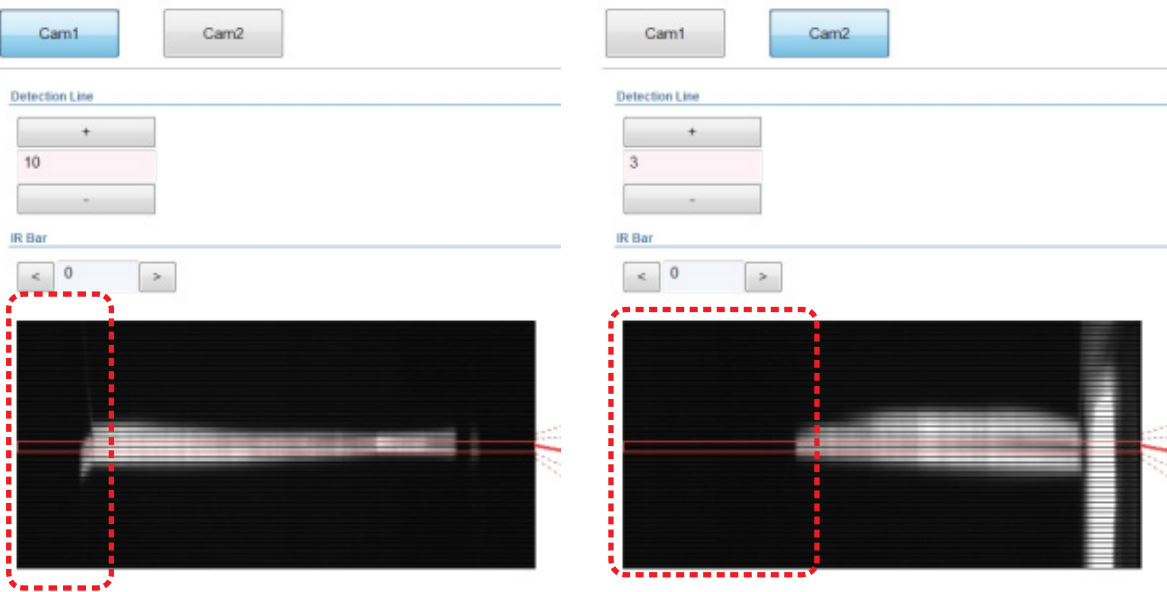
<Light Bar shape of abnormal IR Bar (Bottom Left)>



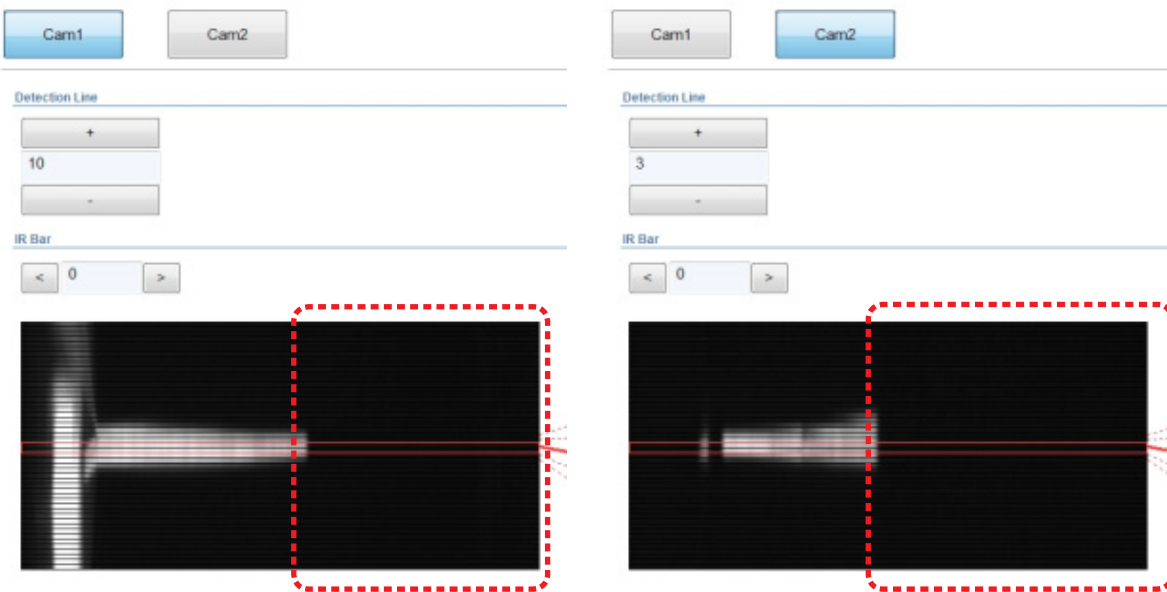
<Checkpoint for abnormal IR Bar (Bottom Right)>



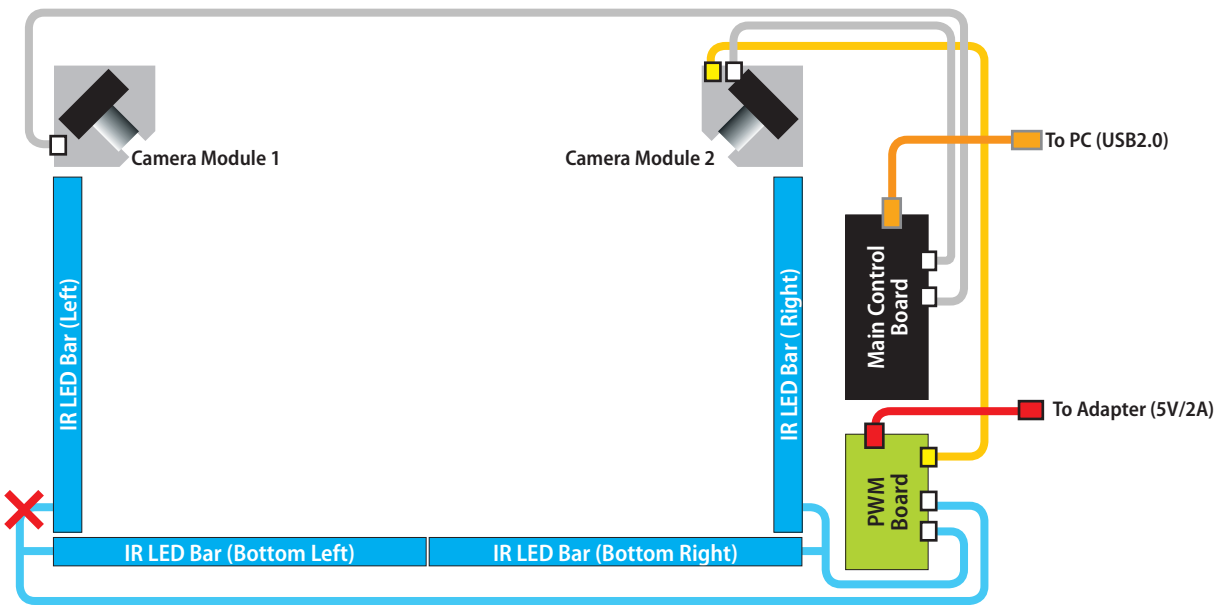
<Checkpoint for abnormal IR Bar (Bottom Left)>



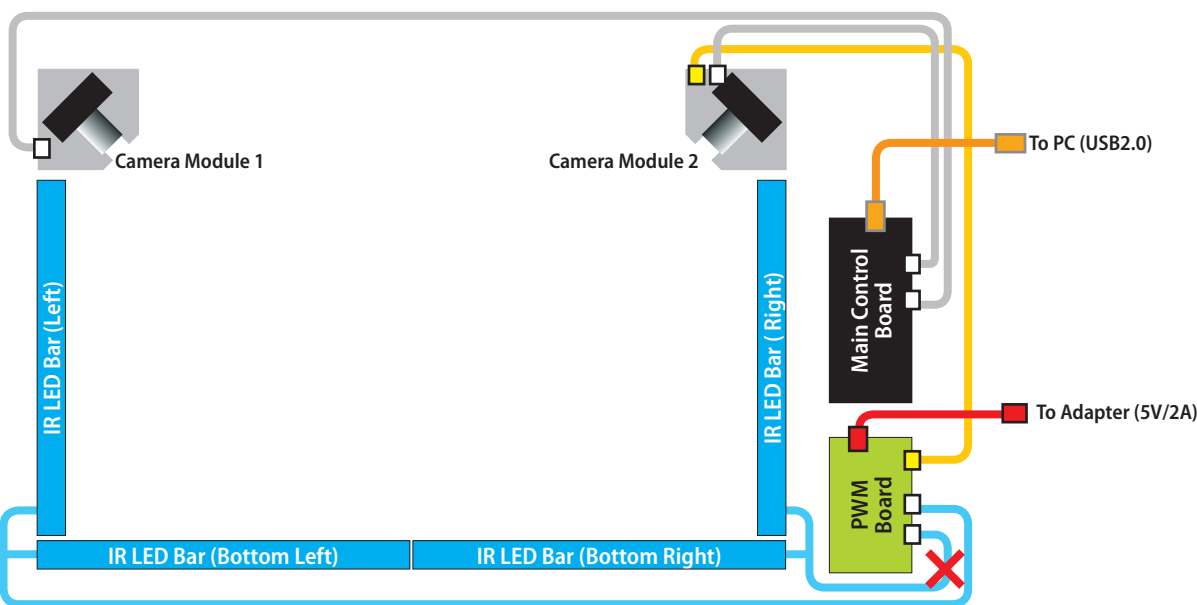
<Light Bar shape of abnormal IR Bar (Left)>



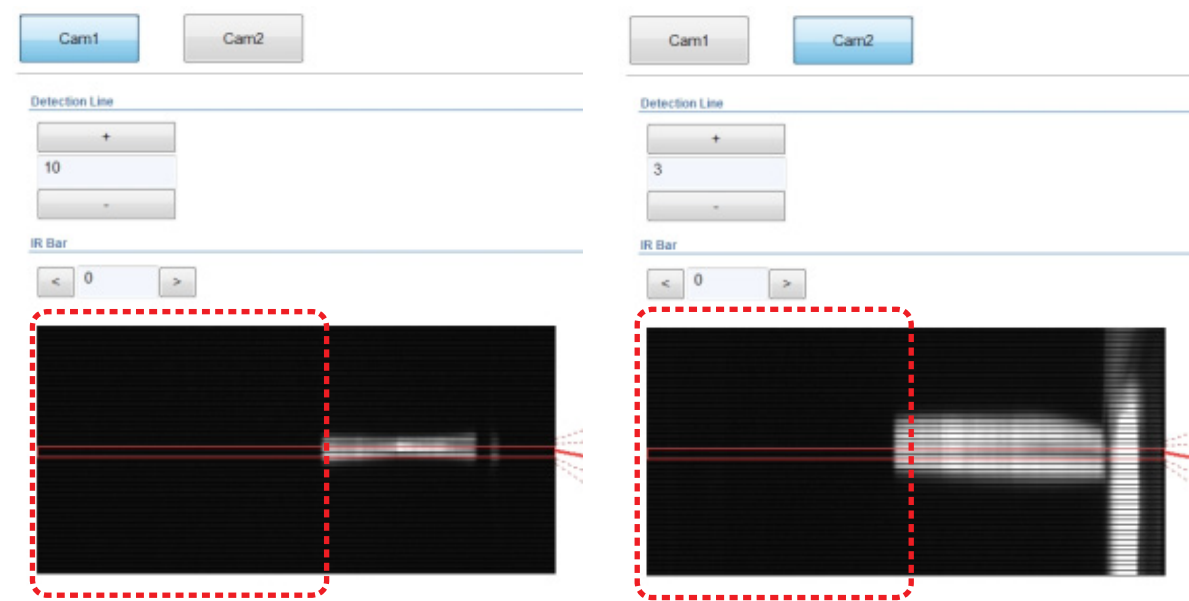
<Light Bar shape of abnormal IR Bar (Right & Bottom Right)>



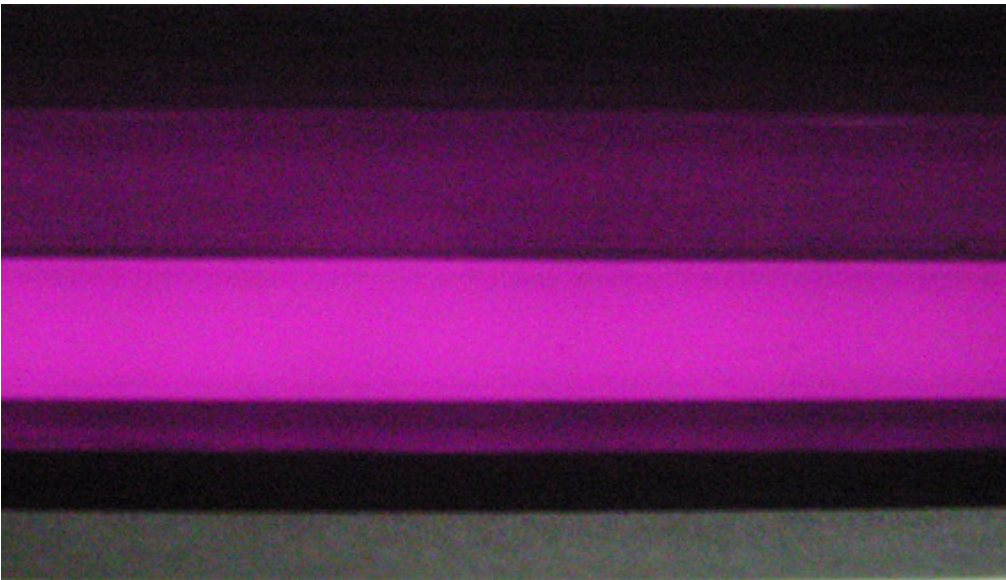
<Light Bar shape of abnormal IR Bar (Left)>



<Checkpoint for abnormal IR Bar (Right & Bottom Right)>

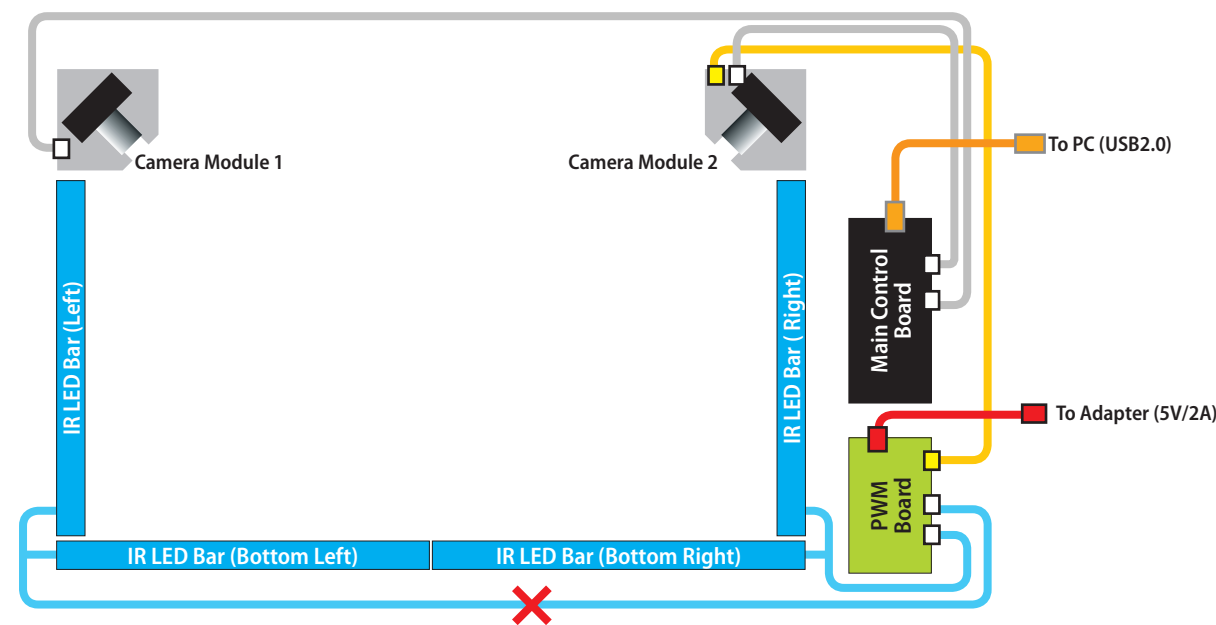


<Light Bar shape of abnormal IR Bar (Left & Bottom Left)>



<Clos-up Picture>

- If the cables and IR LED Bar are normal, check the condition of PWM Board that supply power from Power Supply Adapter to IR LED Bar. If it has any problem, replace it.

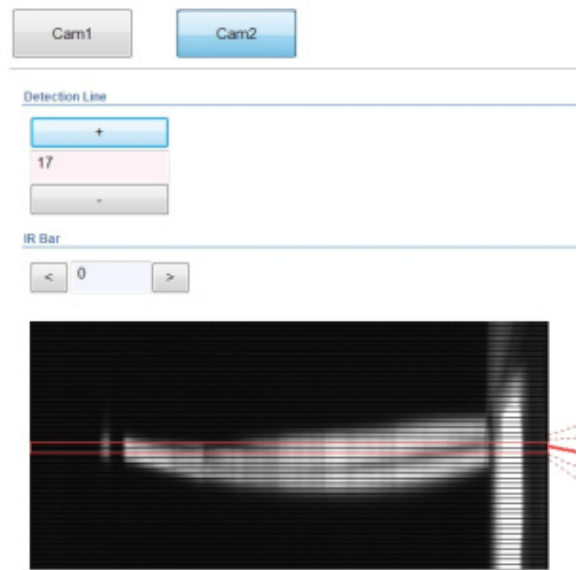


<Checkpoint for abnormal IR Bar (Left & Bottom Left)>

- If the cables are normal, check the condition of IR Bar. Replace the IR Bar if it does not emit IR ray properly.
- It can be easily checked by taking pictures with a common digital camera.
- IR LED Bar emits purple light in the picture.

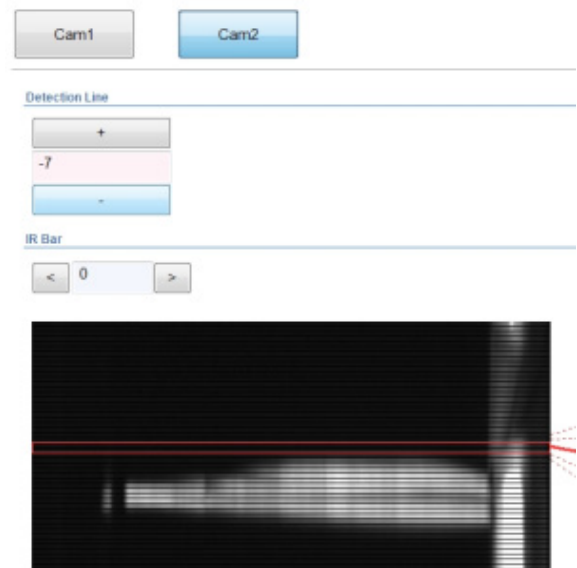
7.2.3. In case Touch Sensor does not work properly when Light Bar is displayed.

- If the shape of the light bar is bent, adjust the tilt bolt in the camera module with a ball screw driver to flatten the light bar.



<Bent shape of Light Bar>

- (Refer to **"Correct Adjustment of the Tilt" in Page 43**)
- If the light Bar is not positioned at the center and positioned upside or lower side of the screen, adjust "Detection Line" to locate the light bar between the red lines.

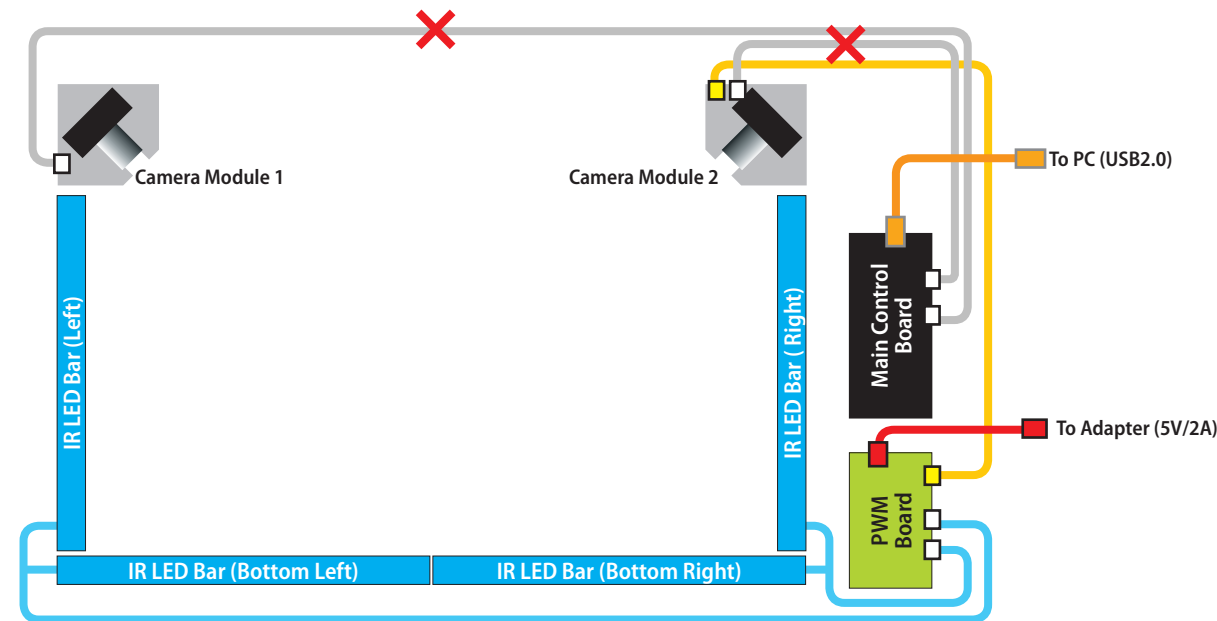


<Light Bar is positioned lower side of the red lines.>

- (Refer to **"Correct Adjustment of the Tilt" in Page 43**)
- Repeat Sensor Configuration (Factory Edition) from the beginning after adjusting the shape and location of light bar.

7.2.4. Beeping sound from Main Control Board

- If there is any problem on the cable between Camera Sensor Module and Main Control Board, Beep sound occurs.
- Check the cable connector s for Camera Sensor Module and Main Control Board and reconnect the connectors.



<Check points for the cable connector s between Camera Sensor Module and Main Control Board>

- If the cables and connectors have no problem and the beeping sound continues, replace the Main Control Board.
- If the beeping sound continues even after replacing the Main Control Board, replace the Camera Sensor Module

7.3. Fan Malfunction

- Check the Power Supply Adapter whether it supplies 12V output to the Fan properly
- If it does not supply enough power, replace the Power Supply Adapter.
- If the Power Supply Adapter is fine, check the cables between the Fan and the Power Supply Adapter.
- If a certain fan is not working, replace the fan.

8. Controlling by MSCS

8.1. MSCS Installation

- Insert the Installation CD.
 - You can see following installation start screen.
 - Select proper version for your product and start installation
- MSCS supports Windows® 2000, Windows® XP and Windows® Vista, Windows® 7™ only



MSCS Installation start screen.



Caution for using MSCS

1. Data for Picture control, Manual Tracking and so forth can be read by clicking the right button of your mouse on the desired MPDP set from MSCS.
Please do not use above function together with the other functions.
2. When you off AC power, execute power off by MSCS first and disconnect AC power to save your configuration.

8.2. Start MSCS

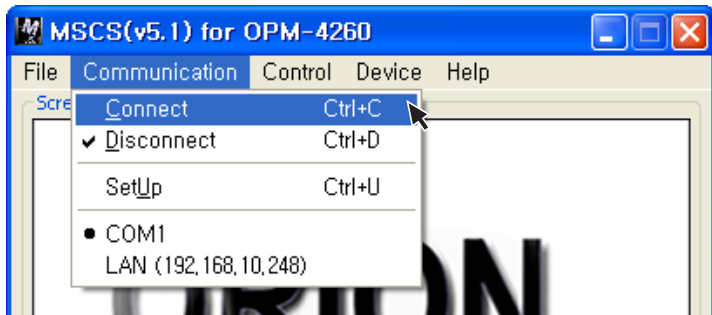
- MSCS is an application program needed to control MPDP.
- When you execute MSCS (v 5.1) for your product at the installation screen, it will create a new folder at C:/ Program File/MSCS (v5.1) and an icon on your computer screen.
- By double clicking the MSCS (v 5.1) icon, the initial screen image of MSCS (v 5.1) will be displayed as shown in the picture.



Main Image of MSCS (Multi Screen Control system)

8.3. Setting of COM Port

- Com Port connects or disconnects the communication between PC and MPDP.
- Connect MPDP to PC Com Port via RS-232C cable.



- Go to MSCS Menu -> Communication and set Com Port. Click 'Connect' using mouse or press 'Ctrl+C' using keyboard.
- In order to disconnect communication, click 'Disconnect' using mouse or press 'Ctrl+D' using keyboard.

When you use USB-to-RS-232C converters, you need to set Com Port again, because MSCS uses one of Com Port no. 1 to 30.

※ Available Com Port on the PC is automatically recognized and displayed.

- Com Port Configuration

Baud Rate	115200bps(Fixed)
Data Bit	8Bits
Parity	None
Stop Bit	1Bit
Flow Control	None

8.4. "New design/Last design" setting

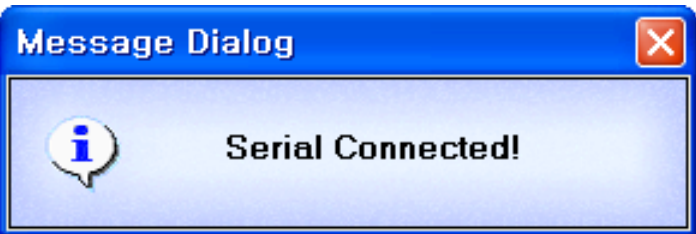
- You can see following pop-up window for "New design/Last design" when you click "Connect" or press "Ctrl+C" using keyboard after select communication type.



New/Last Design Set

- Click "Open New Design" to prepare new configuration.
- Click "Open Last Design" to go to last design before closing.

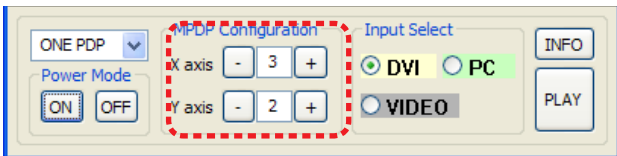
- When the connection is successfully completed after setting Com Port, following Message dialog is displayed. The dialog window will be disappeared in 1 second.



8.5. Multi-screen configuration

1. Input the numbers of X and Y

- X is for the number of row and Y is for column.
- X and Y can be selected within the range from 1 to 15. The maximum MPDP quantity of MSCS control is 100 sets.
- MPDP image of selected numbers of X and Y is displayed in the Screen configuration in one second after setting the number.

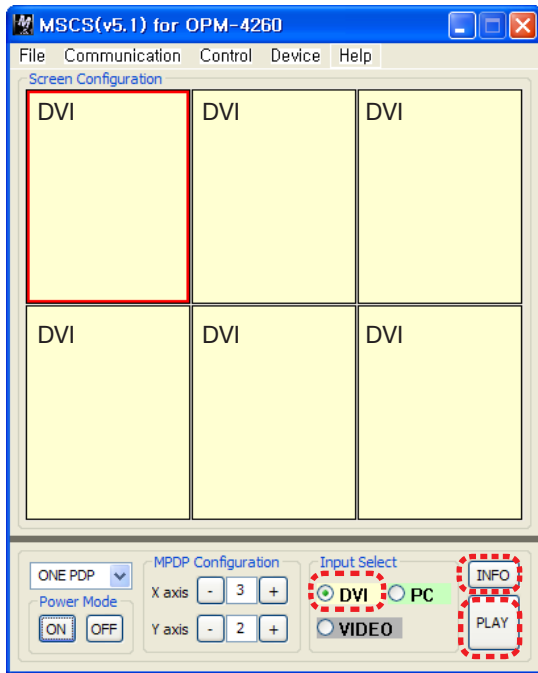


Screen Configuration Setting

2. Select one of input sources from DVI, PC or Video

3. Execution of the configuration.

- When you click "PLAY" button after selecting input source from Source select and the numbers of X and Y in MPDP Configuration, the configuration of MPDP is generated as shown in the figure below.

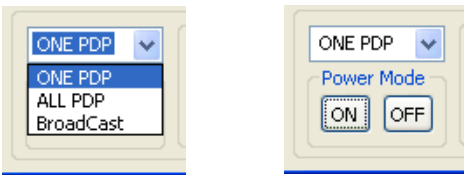


※ INFO :

- Check the resolution of the input source. It is displayed at the upper right corner of the screen.
- Check the signal. If there is no input signal, "No signal" is displayed.

8.6. Selecting the command transmission method

- **ONE PDP** : Transmit Protocol Command to one MPDP..
- **ALL PDP** : Transmit the Protocol command sequentially to all connected MPDP sets.
- **Broadcast** : Transmit the Protocol command simultaneously to all connected MPDP set
- In order to control power of specific MPDP, use "Power On/Off" button after selecting the specific MPDP.



MPDP Control - Power On/Off



Caution

Please wait for at least 10 seconds before executing "Power On" command after the first AC power connection. If not, it may cause abnormal behavior.
Please disconnect AC power and reconnect in case of abnormal behavior.

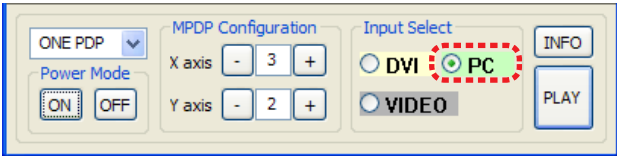
8.7. Changing the input source

- Varieties of screen formations are available with screen configuration.

1. If you select DVI and click Play button at the Input Select menu, the input source will be changed from PC to DVI .

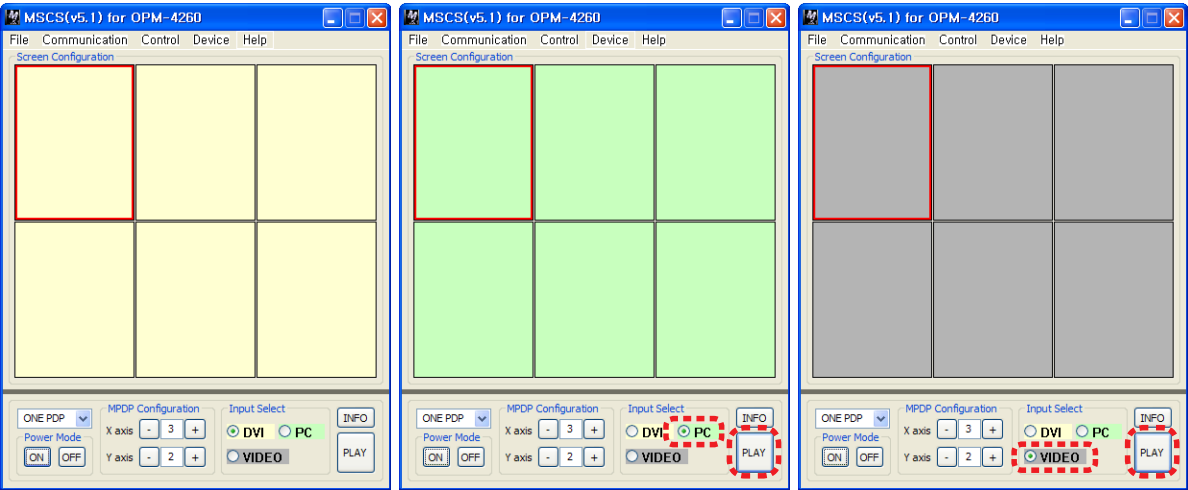
1) Select PC at the Input Select menu.

— e.g.) in case PC is selected



2) If you select DVI and click Play button at the Input Select menu, the input source will be changed from PC to DVI .

— In case you do not select a screen and click Play, the input source for the all screen will be changed.



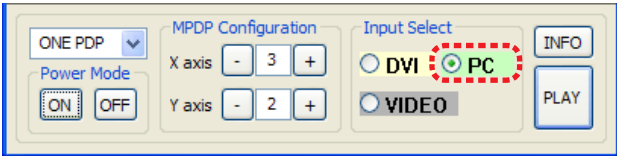
※Input source is not displayed on the MSCS screen, but it is indicated by colors.
(DVI : Yellow PC : Green Video : Gray)

3. Screen formation

- To make various Input-screen formation, select an input source and click the screen you want in the Screen configuration with the left button of the mouse.

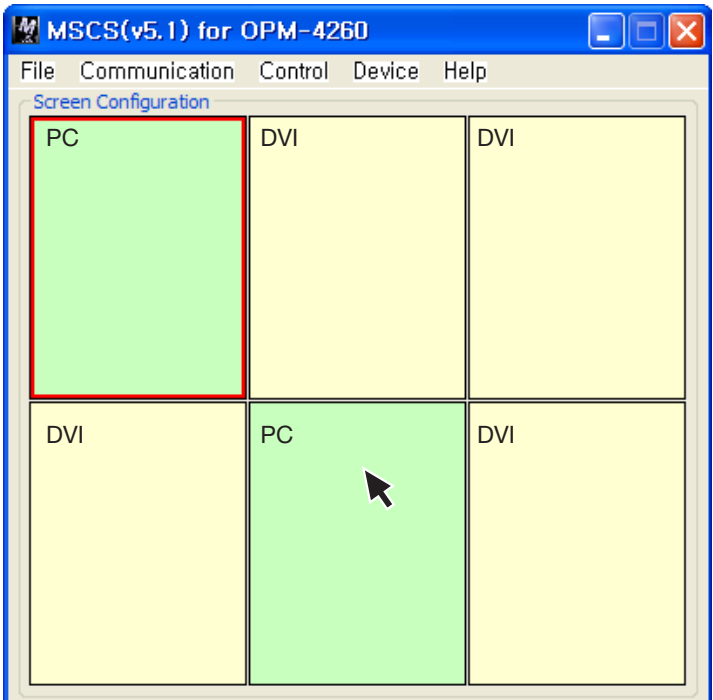
1) Select PC at the Input Select menu.

— e.g.) in case PC is selected



2) Click the screen you want in the Screen configuration with the left button of the mouse.

- Click the screen you want in the Screen configuration with the left button of the mouse.
- DVI screen will be changed with PC.

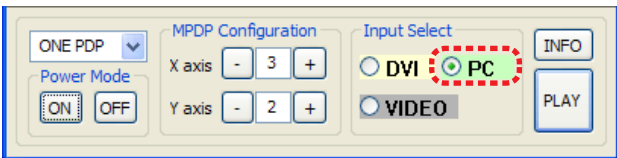


3. Screen Formation with one step.

- You can make various multi-screen formations with simple movement.

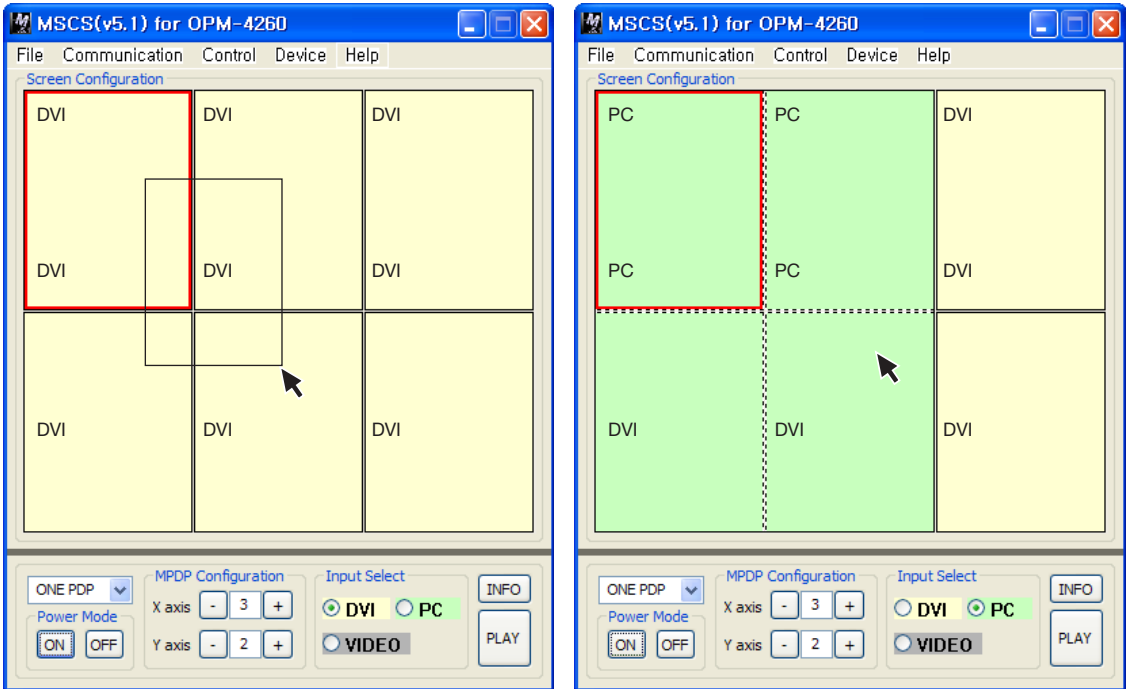
1) Select an input source at Source Select menu.

- e.g.) In case you want to select PC



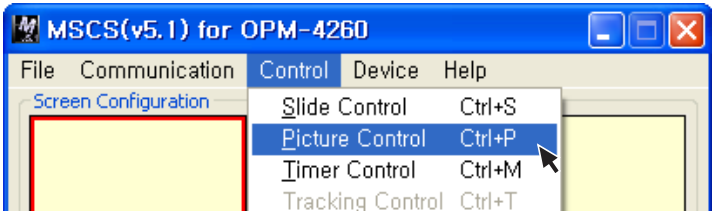
2) Click the screen you want in the Screen Configuration with the left button of the mouse and drag.

- Click the screen you want in the Screen Configuration with the left button of the mouse and drag to the screen you want to include.
- When you stop dragging, selected screens will be changed to PC automatically.

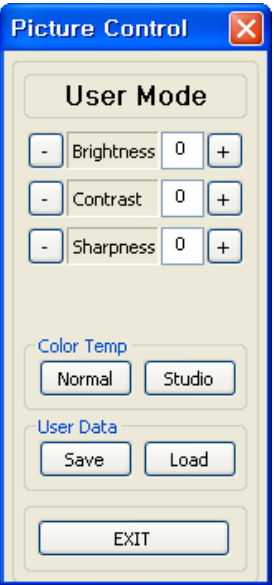


8.8. Picture Control

- Register values related to display of MPDP can be changed.
- To use Picture Control, go to MSCS Menu -> Control -> Picture Control or press "Ctrl+P" using Keyboard.

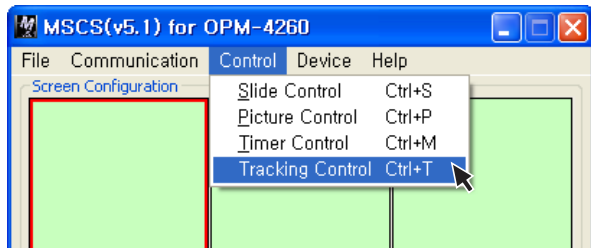


- In order to control display values, input values directly in "Edit Box" and press Enter key. Or click -/+ button using mouse.
- Click "Exit" button or press "Ctrl+X" using keyboard to close "Picture Control" window.
- **Color Temp** : Change the color temperature of the screen
-Normal : Initial setting. Proper for normal video image view.
-Studio : Low Color temperature. Proper for broadcasting purpose.
- **Brightness** : The range of "Brightness" you can adjust is 0 to 100.
- **Contrast** : The range of "Contrast" you can adjust is 0 to 100.
- **Sharpness** : The range of "Sharpness" you can adjust is 0 to 28.
- **User Data** : Users can adjust color impression with white screen and save or load the adjusted value.
- Save - Save User's data file (*.pdt)
- Load - Load User's data file (*.pdt)

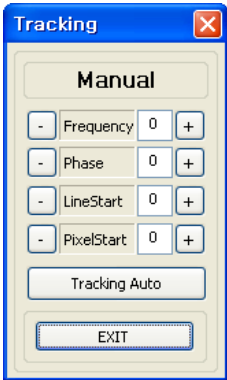


8.9. Tracking Control

- Alignment adjustment is available when input source is PC.



- Go to "Control" in menu bar -> Tracking Control or press "Ctrl+T" using keyboard to run "Tracking" window.
- Press "Tracking Auto" button in order to run auto tracking.
- In case alignment doesn't work through "Tracking Auto" command, user can tune finely through "Manual".
- Manual Tracking enables users to set Frequency, Phase, LineStart and PixelStart.
- Select panel ID which you want to adjust alignment.

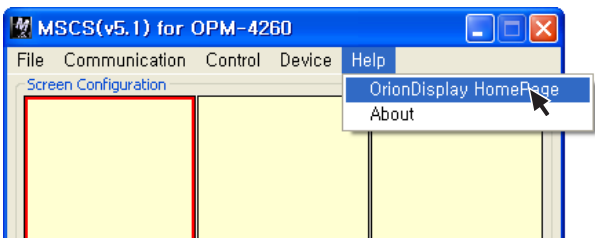


Tracking Manual Window

- Detail adjustment steps are as follows.
 - 1) Tune "Phase" until the vertical lines are clearly adjusted..
 - 2) Tune "LineStart" to adjust vertical alignment. "PixelStart" for horizontal alignment.
 - 3) Adjust "Frequency" if alignment is still wrong.
If you adjust "Frequency", repeat step 1) and 2) to fit alignment.
Adjustable range is as follows
 - The range of "Frequency" you can adjust is -50 to 50
 - The range of "Phase" you can adjust is 0 to 63
 - The range of "Linestart" you can adjust is -23 to 10
 - The range of "Pixelstart" you can adjust is -50 to 40
- Click "EXIT" button or press "Ctrl+X" using keyboard to close "Tracking" window.

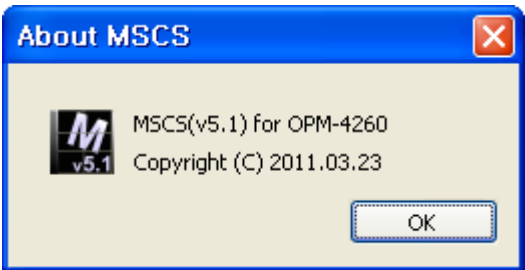
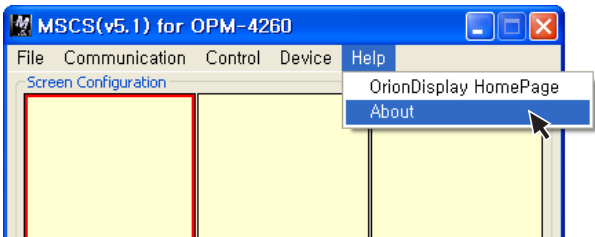
8.10. ORION Homepage log on and Version Information

- In order to move to Orion website, go to "Help" of menu bar ->"OrionDisplay HomePage".



ORION Homepage Log on

- Go to "Help" of menu bar -> "About" to check MSCS.



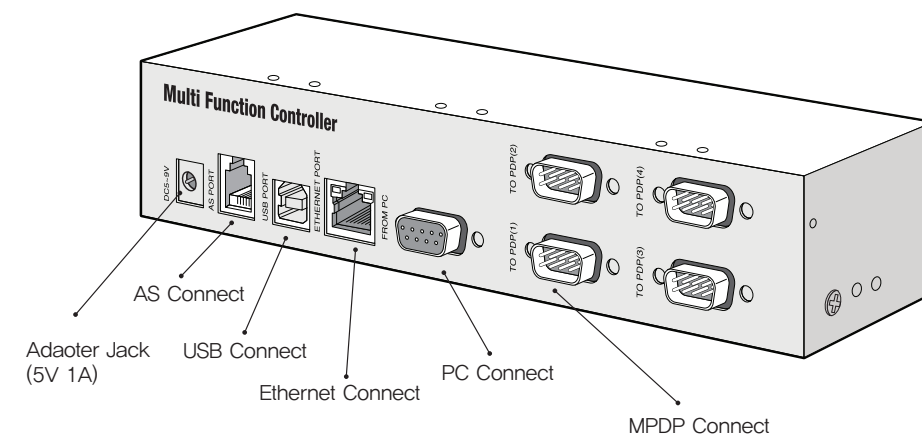
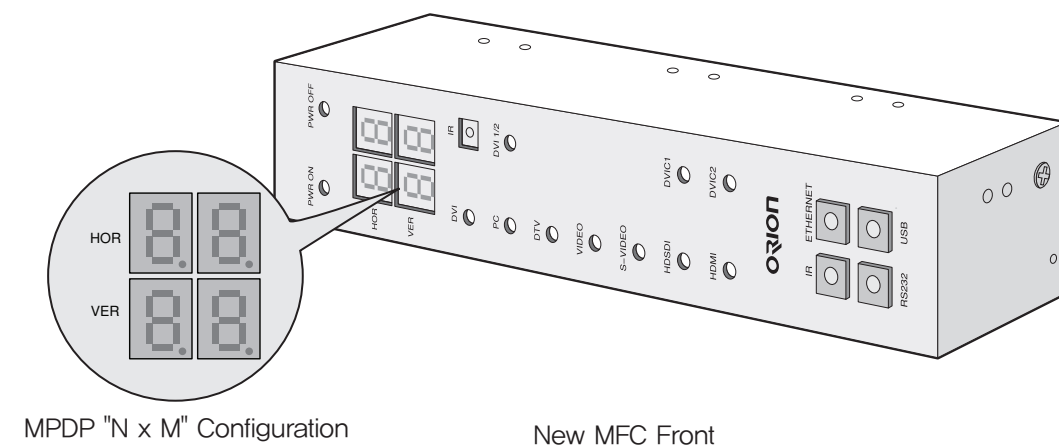
Checking MSCS Version

9. Controlling by New MFC

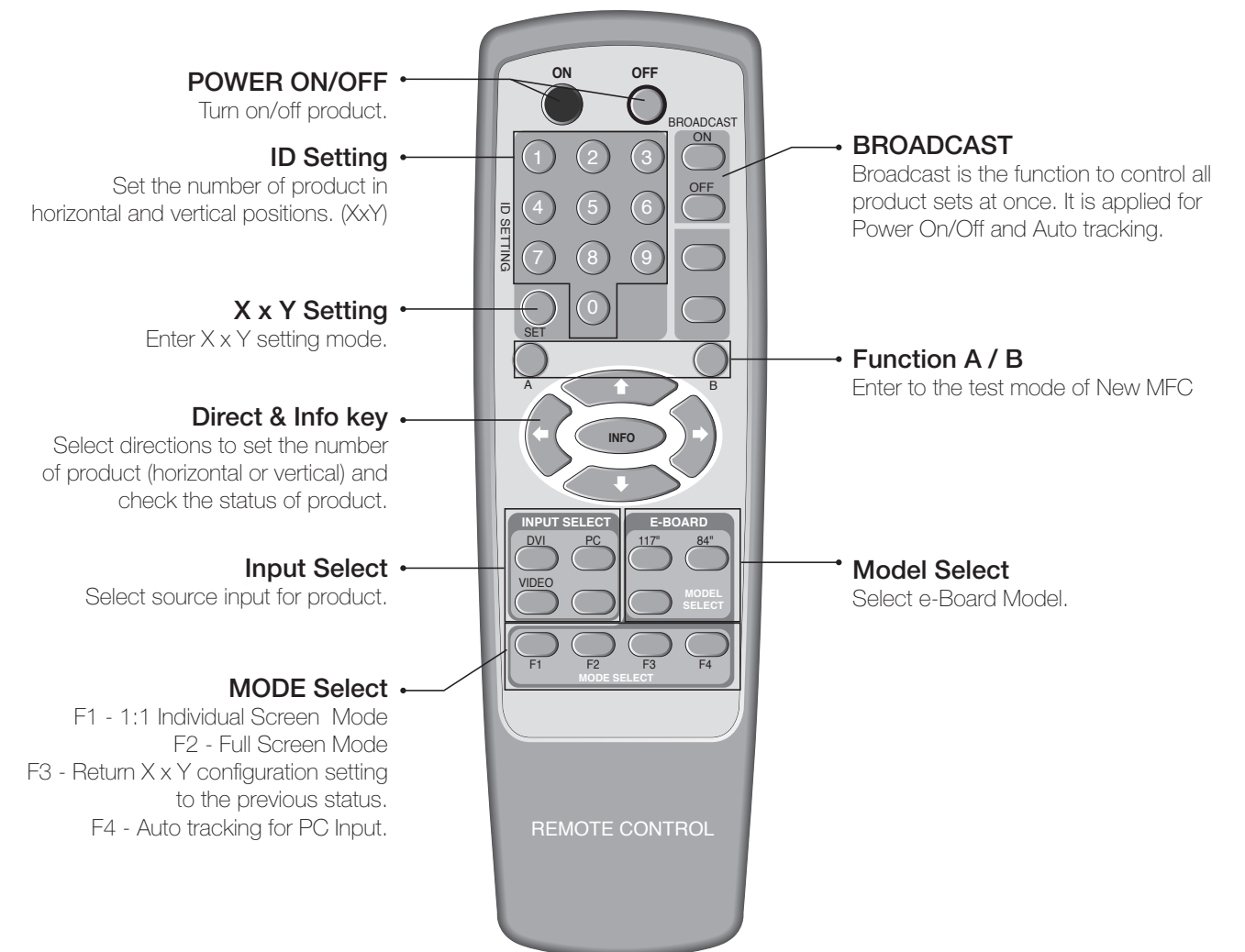
9.1. New MFC Connection

1. Connect male D-sub of New MFC to the RS-232C port in MPDP with RS-232C cable.
2. Connect power of New MFC
3. Install the New MFC at the location of good Remote controller reception.
4. Set the number of the connected MPDP units in advance. The number can be set only by the Remote controller.

※ For the additional information refer to the "New MFC manual"



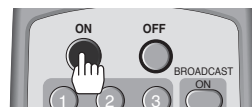
9.2. Remote controller



9.3. How to use Remote Controller

9.3.1. Turn On/Off

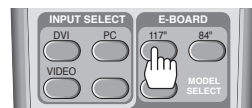
- Every command is executed on all product sets.



- 1) **ON** : Product is turned on as the PWR LED of the New MFC is turned on
- 2) **OFF** : Product is turned off as the PWR LED of the New MFC is turned off.

9.3.2. Model Select

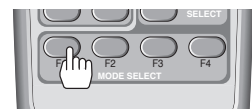
- This function is used to select the e-Board Model.
- X x Y configuration is automatically set.



- 1) Select the installed e-Board Model.
 - 117" is 3 x2 configuration
 - 84" is 2x2 configuration.

9.3.3. Mode Select

- This function is various.

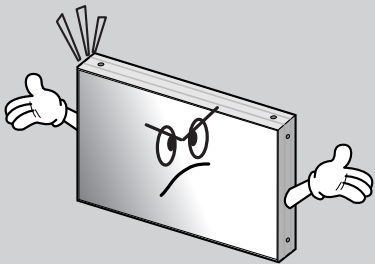


- 1) **F1** : Display individual screen on the E-Board.
- 2) **F2** : Display full screen on the E-Board.
- 3) **F3** : Return X x Y configuration to previous status.
- 4) **F4** : Execute the Auto tracking function(PC Input only).

10. Troubleshooting

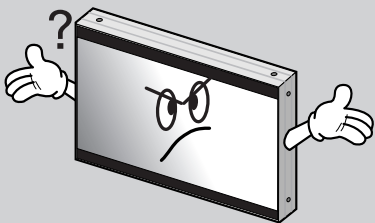
9.4. Before calling for service

- Before calling for any repair, check the following and then refer to a near A/S center.



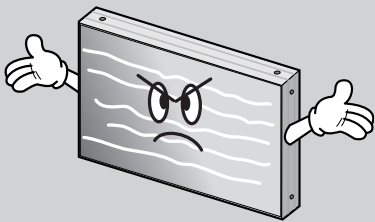
► "Tick" sound from the main body

- If there is no problem with the screen or sound, the "tick" sound is likely to result from the cabinet lightly shrinking with the change of room temperature. The sound does not affect product's performance.



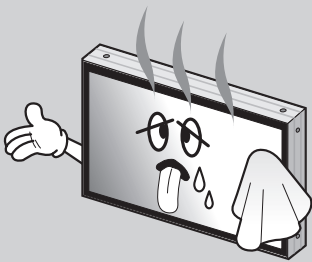
► No image at upper and lower part of the screen.

- As for a screen which is over 16:9 in width (such as cinema-sized one), no image may be displayed at upper and bottom part of the screen.



► Speckles or white lines on the screen

- Check whether the problem is caused by vehicle, streetcar, high-voltage cable or neon sign, which emitting interference wave or electromagnetic induction. Avoid any interfering object.

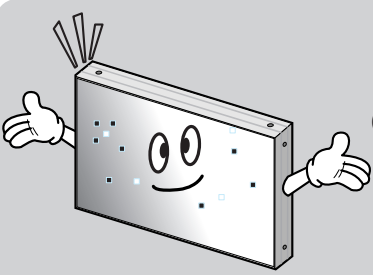


► Screen or PDP Set is hot

- PDP sets or screen can be hot, because basic principle of PDP driving is Plasma discharge between electrodes.
- It is not a defect or a malfunction of the product, you may continue to use the product.

10.1. About Plasma display panel

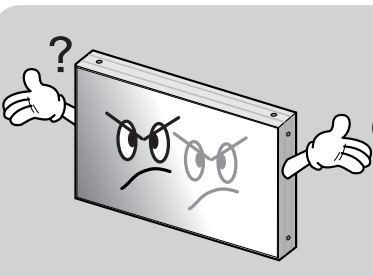
- The followings are phenomena caused by characteristics of the plasma display panel.
- Since it is not a fault, you may continue to use the product.



 **Caution**

► **Black or twinkling spots on the screen**

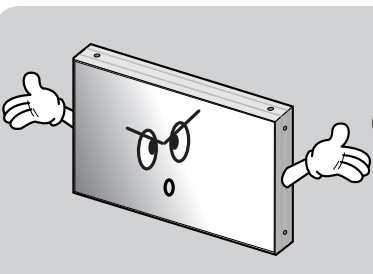
- Although the plasma display panel is manufactured with high-precision technology, there may exist black or twinkling spots on the screen. Since it is not a fault, you may continue to use the product.



 **Caution**

► **Burn-In effect**

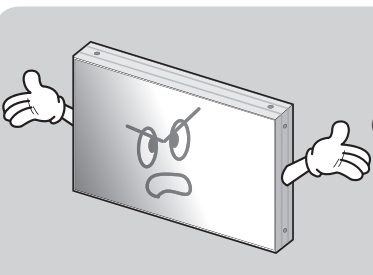
- Displaying static images such as still video frames or computer screen images for an extended period of time may cause burn-in effect. The burn-in effect may be gradually reduced by displaying full white pattern.
- However, please always be careful in using static images on this product, because such burn-in effect may cause permanent damages in some cases.



 **Caution**

► **Noise from the inside**

- When you turn on the product slight buzzing sound may be heard from the rear of display panel. Since it is not a fault, you may continue to use the product.



 **Caution**

► **Screen decolorization**

- Optical film that is attached on the panel can be slightly decolorized after long time of use. The degree of decolorization may vary depending on display contents and conditions. It is due to the characteristics of the film, but it is not a defect. (It is caused by chemical characteristics of the film.)

11. Applicable DVI signals

- DVI input supports the DTV signal.

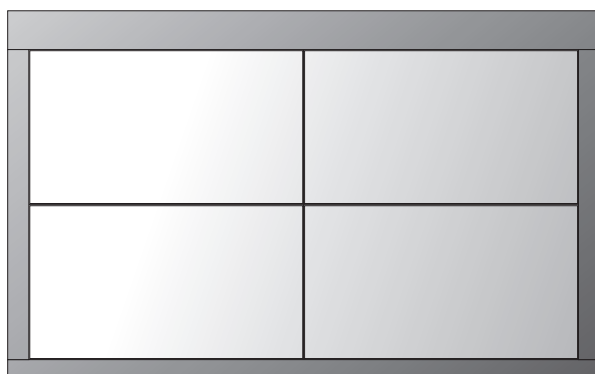
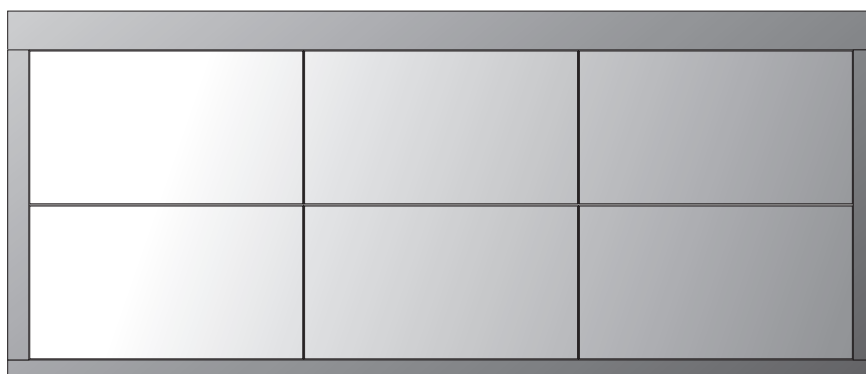
Resolution	V-Freq. (Hz)	H-Freq. (KHz)	Remarks
640 x 480	60	31.46	VESA DMT
800 x 600	50	30.99	VESA CVT
800 x 600	60	37.88	VESA DMT
853 x 480	50	31.50	-
853 x 480	60	31.50	VESA DMT
1024 x 768	60	48.36	-
1280 x 768	60	47.69	VESA CVT
1280 x 960	60	60.00	VESA DMT
1280 x 1024	50	52.67	VESA CVT
1280 x 1024	60	63.97	VESA DMT
1360 x 768	50	39.56	VESA CVT
1360 x 768	60	47.71	VESA DMT
1366 x 768	50	48.79	-
1366 x 768	60	48.77	-
1400 x 1050	60	65.317	VESA CVT
1600 x 900	50	46.39	VESA CVT
1600 x 900	60	55.99	VESA CVT
1600 x 1200	50	61.79	VESA CVT
1600 x 1200	60	75.00	VESA DMT
1706 x 960	60	59.57	

- DTV signals

Resolution	Pixel Clock(MHz)	H-Freq. (KHz)	V-Freq. (Hz)
480p	27.000	31.467	60.00
576p	27.000	31.250	50.00
720p	74.250	45.000	60.00
720p	74.250	37.500	50.00
1080i	74.250	33.750	60.00
1080i	74.250	28.125	50.00
1080p	148.500	67.500	60.00
1080p	148.500	56.250	50.00

12. Specification

Model Name		OPE-8401	OPE-11701
Panel	Aspect Ratio	16 : 9	24 : 9
	Active Area	1846.8 x 1041.4	2,770.2 X 1,041.4
	SEAM Size	1.9mm	1.9mm
Touch	Resolution	32767 X 32767	
	Response Time	7ms to 13ms (typically 9ms)	
	IR Wave	850nm	
	Power Consumption	Sensor Module : Typically 233mA at 5V IR Bar : 200mA per meter at 5V at Highest intensity	
	PC Interface	USB 2.0 (High speed), Plug & Play	
	OS	MS Windows, Mac OS X, Linux	
PC		Optional (External PC)	
Input/Output		DVI, D-Sub, Video (BNC), Ethernet (RJ45), RS232C	
Dimension		1958.4 x 1205.6 x 100.1	2881.7 x 1241.4 x 100.1



※Product design and specification can be changed for quality improvement without prior notice.